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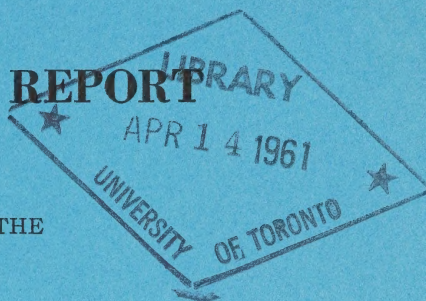


CANADA
IN

Grain Commissioners, Board of

ANNUAL REPORT

OF THE



Board of Grain Commissioners for Canada

FOR THE YEAR

1960

DEPARTMENT OF AGRICULTURE
OTTAWA, CANADA

Minister:

HON. ALVIN HAMILTON, M.P.

Deputy Minister:

S. C. BARRY

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1961

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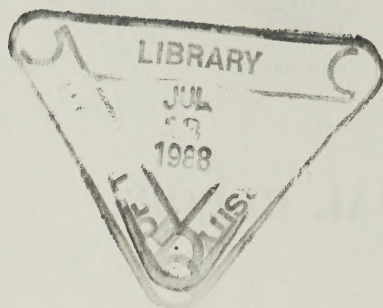


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Winnipeg, Manitoba,
January 13, 1961.

The Honourable Alvin Hamilton, M.P.,
Minister of Agriculture,
Ottawa, Canada.

Sir:

We beg to submit herewith Report of the Board of Grain Commissioners for Canada for the year 1960 in compliance with Section 23 of the Canada Grain Act.

This report records information and statistics relating to grain handlings for the crop year August 1, 1959 to July 31, 1960, expenditures and revenue for the fiscal year April 1, 1959 to March 31, 1960, and summarizes the major activities of the Board for the 1960 calendar year.

Grain Supplies and Disposition—Crop Year 1959-60

Canada's grain carryover was further reduced during the 1959-60 crop year despite declines in the disappearance through both domestic and export outlets. By July 31, 1960, combined stocks of wheat, oats, barley, rye and flaxseed in all positions totalled 763.5 million bushels, some 47.1 millions or 6% below the storage volume at the preceding year ending and 356.8 millions lighter than the record carryover of 1,120.3 millions on July 31, 1957.

The inward carryover at August 1, 1959, was estimated at 810.6 million bushels held either in licensed storage, or in farmers' bins, or in transit between positions. The 1959 crops of wheat, 413.5 millions, and oats 417.9 millions, were above 1958 production, that of rye steady at 8.1 millions and those of barley 225.6 and flaxseed 17.7 millions, were below the previous year's output. The combined production of 1,082.8 million bushels, added to the inward carryover, established the available supplies at 1,893.4 million bushels for 1959-60 domestic needs and exports.

The 1959-60 commercial disappearance of 1,129.9 millions was made up of 352.4 millions exported in the form of grain or wheat flour and 777.5 millions utilized within Canada for feed, seed, human food and industrial use. Both exports and domestic usage were down from the corresponding volumes for the 1958-59 season although still well above the long-term 30-year averages for these movements.

Within the licensed elevator system the individual sector operations reflected a varied pattern. Country marketings were down in total, although wheat deliveries were heavier than in the previous season. Country elevator shipments held relatively steady but a shift in the distribution pattern was indicated by an increased movement to Lakehead terminals and to mills. Carlots to the Pacific Coast fell off as ocean shipping at that sector was cut back; this resulted in lighter shipments from Alberta elevators and a heavier movement from Saskatchewan points. At Fort William-Port Arthur terminals the vessel movement showed a slight increase. The period August 1, 1959 to July 31, 1960 represented the first complete crop year of operations subsequent to the opening of the St. Lawrence Seaway. The development of a direct overseas cargo movement in volume from the Canadian Lakehead, the elimination of a substantial portion of the transfer vessel movement at Lower Lake ports and the impact of these developments on operations at the St. Lawrence River elevators, are immediate results reflected in the handling statistics.

Marketings

The restricting influence of the continued congested storage situation on the primary movement into the licensed system was again indicated in 1959-60 by a further decline in country marketings at western points. Total deliveries during the crop year to all licensed elevators, east and west, amounted to 518.8 million bushels of wheat, oats, barley, rye, and flaxseed combined,—38.0 millions below the previous season's intake. Deliveries to western country elevators totalled 512.0 millions, with primary marketings at interior terminals and mills accounting for 4.6 millions, and loadings over platforms a further .2 millions. Primary deliveries of eastern grown grain direct to licensed eastern elevators at 2.0 millions were the lightest in recent years. Wheat marketings did not reflect the downward trend of the total and at 379.9 millions were slightly above the 1958-59 inward volume. The principal decline in marketings occurred in barley (95.6 millions compared with 121.3 millions the year previous) and in oats for which the 24.6 millions delivered represented the lightest marketings of this grain in over 30 years.

Country Shipments

The volume of grain moving forward from country elevators was relatively steady during 1959-60, at 525.2 millions in total. The carlot movement had registered a sharp decline in 1958-59 but this was not repeated and wheat shipments were 17.0 millions heavier at 367.0 millions and close to the 1957-58 level. The distribution pattern of this rail movement showed a reduced percentage (25.2%) billed for west coast destinations, reflecting a reversal of the trend of recent years during which the carlot movement to Pacific Coast terminals had risen progressively from 21.0% of total country shipments in 1955-56 to 28.1% in 1958-59.

Terminal Handlings

Receipts and shipments at the Fort William-Port Arthur terminal group were slightly heavier during 1959-60 at 299.7 millions unloaded and 295.4 millions shipped. The lake portion (286.7 millions) of the latter figure was 8.5 millions higher than the previous year's vessel movement as a result of increases in both direct overseas shipping (16.8 millions compared with 11.9 millions) and cargoes billed to United States lake ports (19.4 millions against 15.9 millions in 1958-59).

Pacific coast terminals reported a reduced handling volume for the second consecutive year. Wheat shipments were down 11.4 millions at 95.1 millions, and barley loadings dropped 5.0 millions to 31.9 millions. Clearances of oats at 2.7 millions, rye at .3 millions and flaxseed at 6.8 millions, completed the 136.8 millions of ocean shipping through this sector—17.3 millions less than the 1958-59 outbound traffic and 32.8 millions below the peak movement recorded in 1957-58.

The Port of Churchill handled 21.7 million bushels of wheat and .1 millions of oats during the 1959-60 crop season to establish a new record for shipping through the North-east passage. The 1960 season of navigation, the initial portion of which is included in the above crop year figures, saw a slight falling off in Churchill loadings. Forty-eight vessels carried a total wheat cargo of 19.6 millions, compared with the 58 vessels and 21.8 millions in 1959.

The damp harvest of 1959 resulted in substantial grain-drying operations at all terminal positions. A total of 76.6 million bushels of wheat, oats, barley, rye and flaxseed combined were dried during the crop year—53.3 millions by artificial and 23.3 millions by natural means. The largest portion of this operation, 45.7 millions, was accomplished at the Fort William-Port

Arthur terminals; Pacific Coast terminals dried 27.9 millions; interior terminals dried 2.7 millions, and a further .2 millions were dried at Churchill. This volume is, of course, short of the 168.8 millions dried in 1951-52 following the very difficult harvest of the 1951 crop, when Canadian facilities were supplemented by driers at Duluth, Buffalo and certain Eastern Canadian points.

Eastern Elevator Handlings

Export shipments through the Eastern elevator section of the Canadian system continued to decline insofar as Canadian grain was concerned. Total clearances for the 1959-60 season amounted to 118.6 millions, made up of 93.6 millions through St. Lawrence River ports and 25.0 millions through the Maritime ports of Saint John and Halifax. The River port loadings were 14.5 millions below 1958-59 levels, while the Maritime sector dropped behind by 6.1 millions. The declines were fairly proportioned between ports. The volume of Canadian grain moved through all eastern elevators to supply Eastern Canadian domestic needs and for milling for export held relatively steady at 118.5 millions.

The impact of the Seaway on the eastern handling pattern was reflected directly in the sharp reduction in the transfer movement (principally at Lower Lake ports) which dropped from 151.4 millions in 1958-59 to 97.6 millions in 1959-60, as 73.7 millions of grain moved direct from the Canadian Lakehead to the St. Lawrence River ports in contrast to only 28.5 millions in the previous year. The handling of U.S. grain for reloading to ocean vessels, chiefly through Montreal, totalled 20.9 million bushels during the crop year. The eastern elevators also moved 10 millions of U.S. grain to Canadian domestic channels and transfer shipped a further 1.2 millions back to Eastern U.S. points.

The winter movement through Halifax and Saint John did not appear to be adversely affected by the Seaway. The decline of 6.1 millions was roughly proportional to the falling off in exports of Canadian grain from the St. Lawrence ports. The trial movement of grain from the Head of the Lakes to Maritime ports by the all-water route was further expanded from .4 millions in 1958-59 to 3.8 millions in 1959-60. The bulk of this grain was for domestic use, although a portion was unloaded at Halifax for storage for subsequent export.

Exports

Canada exported 234.7 million bushels of wheat, 37.4 millions of wheat flour (wheat equivalent), 5.6 million bushels of oats, 57.7 millions of barley, 4.5 millions of rye, and 12.5 million bushels of flaxseed during the 1959-60 crop season. Exports of the five principal grains, together with the grain equivalents of wheat flour, totalled 352.4 million bushels, some 26 million bushels below last year's clearances but still well above the 30-year average for Canadian grain exports calculated at 314.5 millions. Compared with 1958-59 clearances, declines were registered in wheat (17.5 millions), oats (1.4 millions), barley (6.7 millions) and flaxseed (1.8 millions), while export shipments of wheat flour and rye were heavier by .3 millions and 1.3 millions, respectively. On the basis of international grain movement estimates compiled by the Cereal Section of the Food and Agriculture Organization in Rome, Canada's exports represented 22.4% of the world trade in bread grains, and 18% of the trade in oats, barley and flaxseed.

Domestic Usage

Canada's farms and industrial plants absorbed a total of 777.5 million bushels of wheat, oats, barley, rye and flaxseed, for feed, seed and manufacturing purposes in 1959-60. This represented a slight decline from the previous year's consumption and a temporary halt in the progressive expansion which has been the pattern since 1954-55. The bulk of this disappearance was direct from farm stocks, either on the farm on which the grain was produced or through a farmer-to-farmer sale. The industrial portion, that is the total quantities used for milling for human use, for malting and distilling, and for oil crushing, held steady at approximately 75 millions for the crop year. The domestic consumption totals for the individual grains, all purposes combined, have been estimated as follows, with 1958-59 comparative totals in brackets: Wheat 152.8 (173.4), oats 438.5 (429.8), barley 174.5 (170.4), rye 4.8 (6.9), and flaxseed 6.9 (7.6), all millions of bushels.

Carryover

Notwithstanding the declines in both exports and domestic usage, the combined disappearance total of 1,129.9 millions still exceeded new production by 47.1 millions and reduced the annual carryover, all grains, by this amount. This represented the third consecutive reduction in Canada's year-end grain holdings following the record carryover of July 31, 1957 (1,120.3 millions). The 763.5 millions indicated by elevator returns and estimates of farm-held stocks as either in store in licensed elevators or farmers' bins or in transit between positions on July 31, 1960, reflected reductions in the carryover of all grains shown by the following comparative figures, with 1959 totals in brackets: wheat 537.6 (549.0), oats 92.8 (119.0), barley 121.5 (128.2) rye 6.8 (7.9), and flaxseed 4.9 (6.5), all millions of bushels. The total quantity held in licensed storage positions remained steady at 539.3 millions with the heavier year-end stocks of wheat offset by reduced visible holdings of oats and barley. The lighter carryover again was largely attributable to smaller farm stocks of wheat (81.7 millions compared with 130.0 millions on July 31, 1959).

Licensing and Bonding

The total licensed storage capacity at July 31, 1960, was 639,054,610 bushels—631,884,110 bushels in elevators and 7,170,500 bushels in grain storage buildings authorized as supplementary annexes to country elevators. Licences were in effect for 5,413 country, terminal, mill and eastern elevators, a decrease in capacity of 2,891,640 bushels and in licences of 15 compared with corresponding figures as at July 31, 1959. Country elevator capacity was reduced by 16.2 million bushels while terminal and eastern elevator facilities were augmented by 17.4 million bushels of new space including the construction of a complete new elevator at Baie Comeau.

Assistant Commissioners

Through its four Assistant Commissioners, the Board kept in close touch with the operation of licensed country elevators in the Western Division. During the year 1960, the Assistant Commissioners inspected 683 elevators in Manitoba, 1,098 in Northern Saskatchewan, 981 in Southern Saskatchewan, and 1,437 in Alberta, a total of 4,199. This inspection included checks on scales, sieves, moisture meters and certain other equipment; deductions for shrinkage and Prairie Farm Assistance Act Levy; and posting of current Board Regulations applying to country elevators.

Complaints originating from country points totalled 11, as compared with 19 in the previous year.

Disposition of complaints investigated was as follows:

	Manitoba	Saskatchewan	Alberta	Total
No grounds for complaint.....	—	—	1	1
Settlement effected.....	—	2	5	7
Complaint withdrawn.....	1	2	—	3
TOTALS.....	1	4	6	11

The Assistant Commissioners received and handled numerous inquiries on various matters related to country elevator operation. They also discussed accumulated overages with elevator agents concerned.

Prosecutions

One penalty in the amount of \$100.00 was levied against a licensee for failure to comply with instructions issued by the Board.

Shortages and Overages, Country Elevators

Country elevator companies were able to complete the weighover of stocks with respect to 2,101 elevators, some 300 more weighups than were made in 1958-59. A review of these audits indicated no significant changes in the pattern of overages and shortages from that which applied during the previous season as will be noted from the summary table shown below:

Elevators Reporting	1959-60	1958-59
Shortages.....	585	534
Neither Overages nor Shortages.....	4	6
Overages of less than .25%.....	980	846
Overages of .25% to .50%.....	413	316
Overages over .50%.....	119	99
Total elevators weighed over.....	2,101	1,801

The Board summoned 109 agents of country elevator licensees to appear at hearings held at Winnipeg, Regina, Saskatoon, Calgary and Edmonton, in connection with excessively high overages. At these sessions, members of the Board interviewed the agents and examined records concerning their operations in the presence of senior officials of the companies concerned.

Regulations

The following amendments were made to the Board's Regulations, effective August 1, 1960:

Regulation No. 5: The sections headed "Rejected" and "Sample" were revised to provide improved grade names for certain "off grades" of western grain.

Regulation No. 10: This was revised to make it applicable to licensed elevators at all St. Lawrence ports, rather than to Montreal only.

Regulation No. 18: Section 9 was revoked.

Committees on Grain Standards

A sub-committee of the Committee on Western Grain Standards met at Winnipeg on June 21, 1960, to consider problems relating to the grading of barley, and passed a resolution that several changes be made in grading procedure, effective August 1, 1960, including abolition of the commercial grade of No. 4 Canada Western Six-Row Barley.

The Board constituted Committees on Western and Eastern Grain Standards for the Crop Year 1960-61 as provided in Section 25 of the Canada Grain Act. Personnel of these Committees is listed in Appendix A.

A meeting of the Western Committee was held at Winnipeg on October 20, 1960. The members received numerous reports relating to quality of crops grown in the 1960 season and to various other matters in connection with grading of grain, and also selected and settled standard samples and standard export samples for various grades of Western grain.

The Eastern Committee met in Toronto on August 17, 1960, and in Montreal on October 26, 1960, and established standard samples for grades of grain grown in Eastern Canada.

Both groups authorized continued use of previously selected standard samples in instances where suitable recent samples for established grades were not available.

Inspection of Grain

Grain crops in Western Canada in 1960 were generally above average in both yield and grade. In the spring, moisture ranged from adequate to excessive; wet fields delayed seeding in many areas, and some 1959 crops that remained in the fields over winter were not threshed until May.

The wet spring started crops off well; bumper crops were anticipated, but subsequent prolonged drought reduced average yields of grain to just above normal. Drought and heat caused some light weight grain across the southern parts of the three Prairie Provinces, and consequently some degrading; some crops that were sown late on account of the wet spring were damaged by fall frosts, particularly in the Peace River area, but exceptionally dry, mild harvest weather produced higher average grades than in several years. Broken kernels, the result of low moisture content, was a significant grading factor in many districts.

It was estimated that about 95% of the 1960 red spring wheat in Manitoba and Saskatchewan, and about 70% in Alberta, would qualify for Manitoba No. 3 Northern or higher grade. Similarly, amber durum wheat was generally No. 3 Canada Western or higher; blackpoint and smudge were the main reasons for durums not qualifying for No. 1 Canada Western generally. Thin kernels, from the drier southern areas, were conspicuous in the small amount of low grade that was harvested.

In the drier southern districts much of the barley had thin kernels, and frosts damaged some of this grain in the Peace River area, but a high proportion of the barley crop qualified for "malting" grades—No. 3 Canada Western and higher.

1960 crop oats generally had good test weight per bushel, and the fine fall weather produced good supplies of high grade, millers' quality of oats. The average quality of rye was good; No. 2 Canada Western was by far the predominating grade.

Flaxseed was generally No. 1 Canada Western, except for some light weight seed from the drier areas. Rapeseed production was estimated at more than three times over 1959, production having been stimulated by an increased overseas demand for this oil seed; drought in some southern districts, and frost in Northern Alberta did some damage, but most of this crop qualified for the top grade of Canada Rapeseed. The brisk overseas market sparked an unusually heavy fall movement of rapeseed; it was estimated that about 75% of the crop had been delivered from farms by mid-November.

Production of domestic mustard seed increased substantially in Southern Alberta in 1960; most of the crop qualified for No. 1 Canada Western, with the Oriental type predominating.

In the Lethbridge area there were about 7,400 acres of safflower seed and over 1,000 acres of pea beans. Both produced high grade crops; the colour of the beans was exceptionally good and the incidence of damage was quite low.

Research Laboratory

The Laboratory provided information on the quality of 1960 western grain and on grain marketed during the 1959-60 crop year for presentation at the October meeting of the Committee on Western Grain Standards and subsequent publication in maps and bulletins. Quarterly bulletins on the quality of cargoes of Red Spring and Amber Durum wheats were continued; with the beginning of the 1960-61 crop year, these two bulletins have been published with text and table headings in French, German and Spanish, as well as English.

Amongst many services provided to the Inspection Branch, assistance in the control of grain drying was of major importance this year; further simplification of test methods and general procedure resulted in improved control under difficult circumstances caused by the high initial moisture content of much of the grain. The Laboratory continued its co-operation with the Canadian Wheat Board, Trade Commissioners, and others involved in merchandising Canadian grain. Studies of new varieties were undertaken as usual in collaboration with the Department of Agriculture. Basic and Applied research projects completed during the year have been reported in 13 papers published or in press in scientific journals. Difficulties are still being experienced in recruiting professional staff to fill vacancies in research sections.

The Director of the Laboratory accompanied the Chief Commissioner on a mission to Japan and Hong Kong, and subsequently visited Australia and New Zealand. Earlier in the year, he attended cereal conferences in Austria, Norway and the Netherlands, and special meetings in Switzerland. Dr. G. N. Irvine represented the Board at the Netherlands Bakery Foundation Exhibition in Amsterdam, and visited Germany and the United Kingdom. Further studies of markets and of grain handling and processing were made during these tours.

Appendix F provides a summarized account of work undertaken by the Laboratory. More complete and detailed information will be published in the Laboratory's Annual Report for 1960.

Weighing of Grain

The staff of the Board's Weighing Branch provided usual weighing services at licensed elevators and investigated complaints relating to reports of excessive outturn shortages on carlot and cargo shipments. The Board's scale inspector carried out periodic tests and inspections of scales at licensed

terminal and eastern elevators, and made special inspections when such were considered necessary. Further detailed information in regard to the work of this Branch is given in Appendix E.

Weighover of Stocks, Terminal and Eastern Elevators

In accordance with the provisions of Sections 139 and 140 of the Canada Grain Act, 25 terminal and 20 eastern elevators were weighed over during the 1959-60 crop year by members of the Board's Weighing and Inspection staffs.

Deferments into the following crop year were made at 11 terminal elevators at the Lakehead, 9 terminal elevators at other points, and at 8 eastern elevators. The Board found it necessary to grant these deferments to avoid delaying the handling and loading of grain required to meet export orders. However, it was possible to carry out eight of these deferred weighovers before the end of December, 1960.

Tables C-12 to C-14 of Appendix C contain the results of weighovers carried out in the 1959-60 crop year.

Entomological Investigations

To protect Canadian grain in storage from losses by insects and other grain pests, a regular program of inspection of terminal elevator premises and grain stocks was carried out during 1960. Most of the terminal elevators were visited at least once during the season. The elevators in the Bay Port and the St. Lawrence River area were examined on three occasions. One trip was made to the Pacific Coast area. Discussions were held on each visit with the management on the conditions existing and when necessary, instructions were issued on control.

In general, the terminal elevators were reasonably free from insect pests. During the seasons of 1959 and 1960 a stepped-up program on the Pacific Coast has resulted in a marked improvement in most of the elevators in that area.

A visit was made to the new Cargill grain elevator at Baie Comeau in July. As it had just been placed in operation a short time previously, it was too early to determine whether the structural features will pose any special insect problems.

The second season of operation of the St. Lawrence Seaway still leaves some questions as to the future grain handling patterns. As in 1959 a considerable amount of United States grain is being handled for export through Canadian elevators. Further checking has been carried out of United States grain in store in Canadian elevators to determine its freedom from insect pests. One lot of United States corn was found to be infested and was fumigated at the time of unloading. In another case the elevator declined to take an infested cargo.

Some infestation has been found in Canadian Eastern wheat and one parcel was fumigated.

All of the Canadian Government Elevators have been very carefully examined during the past three years. Grain is stored for long periods of time particularly in the interior ones. Large representative samples were drawn from the bottom of all bins and examined for insect infestation.

Two short courses for grain elevator personnel are planned for early in 1961 at Montreal, Quebec and Toronto, Ontario. Because of the changing personnel in the terminal elevators there has been a strong demand from the

management of the terminals for these courses both for new employees and as a "refresher" for older ones. This educational work by the Board is greatly appreciated by the grain trade.

Close contact has been maintained with the various grain inspection offices of the Board by regular visits through the season to discuss insect control with the staff.

The Board's entomologist, Dr. H. E. Gray, has maintained contact with the grain and milling trade through attendance at the Annual Convention of the American Association of Operative Millers in St. Louis, Mo., in May.

Close liaison has been maintained throughout the year with the Plant Protection Division of the Department of Agriculture on matters relating to grain storage and grain-infesting insects.

Terminal and Eastern Complaints

During 1960, the Board directed the investigation of 44 complaints relating to reports of excessive outturn shortages on shipments to Eastern Canadian points. Included were 35 on vessel shipments from Fort William and Port Arthur, 4 on vessel shipments from Eastern transfer ports, 3 on vessel shipments from other ports, and 2 on truck and carlot shipments.

These complaints were disposed of as follows:

No cause of reported discrepancy found.....	16
Settlement effected.....	24
Not yet disposed of.....	4
TOTAL.....	44

Complaints on Export Shipments

A total of 65 complaints relating to shipments to overseas destinations were dealt with by the Board and its officials during 1960. Of this number, 25 concerned outturn weights reported from overseas, and 40 referred to some aspect of the quality of grain cargoes.

Disposition was as follows:

	Quality	Weight
No cause of reported discrepancy found.....	—	21
No grounds for complaint.....	39	—
Settlement effected.....	—	1
Complaint withdrawn.....	—	1
Not yet disposed of.....	1	2
TOTALS.....	40	25

Statistics

Statistics relating to Canadian grain movement collected and compiled by the Board's Statistics Branch are presented in Appendix C of this report.

Information Program

The Board's mobile exhibit was placed on display at 12 agricultural fairs in Manitoba and Saskatchewan during 1960. The exhibit featured samples of various types and qualities of grain, with special emphasis on malting barley, and included a working model of an automatic sampler, a device used at terminal elevators to take samples from a moving stream of grain. Two of the Board's Grain Inspectors were in charge of the exhibit and discussed grain grading and other matters coming under the Board's jurisdiction, with farmers, elevator agents and superintendents and other interested visitors. A special exhibit was prepared for display at a seed show at Moose Jaw during the month of October.

The Board's offices were visited by a number of officials of the Foreign Trade service of the Department of Trade and Commerce, and by other individuals and groups from Overseas who wished to discuss matters related to the grain trade and obtain first-hand information about the functions and services of the Board. Other visitors during the year included groups of country elevator agents and agriculture students.

In addition to discussions with members and officials of the Board, arrangements were made for visitors to tour the Inspection Branch, the Research Laboratory and other branches as desired; also to view the colour motion picture film "Grain Handling in Canada".

Members of the Board and senior officials again accepted a number of invitations to address annual meetings of producer organizations and to discuss topics of current interest related to the Board's work.

Canadian Government Elevators

Receipts of grain during the crop year 1959-60 at the Canadian Government Terminal Elevators operated by the Board at Moose Jaw, Saskatoon, Calgary, Edmonton, Lethbridge and Prince Rupert, were 17.4 million bushels, compared with 18.9 millions in the previous crop year. Total shipments were 18.1 millions, an increase of 1.4 millions from the corresponding figure for 1958-59.

In the fiscal year 1959-60, revenues exceeded expenditures by the amount of \$403,979.

Lake Freight Rates

On March 10, 1959, under the provisions of Section 5 of the Inland Water Freight Rates Act, the Board issued Order No. 21 which revoked Order No. 20 of September 28, 1954. This had the effect of cancelling maximum freight rates established by the Board in Order No. 20 for the carriage of grain from Fort William or Port Arthur to other specified ports in Eastern Canada.

The average rates charged during the 1960 season of navigation are given in Table C-11 of Appendix C.

Prairie Farm Assistance Act

Under provisions of Section 11 of the Prairie Farm Assistance Act the Board continued to collect the one per cent levy on grain purchased by licensees under the Canada Grain Act. During the crop year 1959-60 the amount collected was \$6,326,924.00, a decrease of \$347,074.00 from collections recorded for the previous crop year. Collections by the Board since the inception of the Act to July 31, 1960, total \$120,312,114.00.

Organization and Personnel

Two of the Board's Assistant Commissioners retired during 1960—Mr. M. MacKinnon, after serving in Alberta since 1947; and Mr. J. I. Hetland, after five years' service in Saskatchewan.

Mr. A. Rendfleisch and Mr. C. J. Hunt were appointed to fill the resulting vacancies, with offices at Edmonton and Regina respectively.

There were several changes in senior personnel of the Inspection Branch. Mr. C. E. S. Robertson, Grain Inspector-in-charge at Vancouver since 1949, retired after forty years of service with the Board. Mr. H. McArthur was promoted to succeed Mr. Robertson.

Mr. J. H. McLean was transferred from Calgary to Vancouver and was succeeded as Inspector-in-charge at Calgary by Mr. A. J. Goddard.

After a total of forty-eight years of service, including eleven years as Inspector-in-charge at Montreal, Mr. P. J. Smith retired and his place was taken by Mr. M. M. Ainslie, formerly on the staff of the Fort William Inspection Office.

As a further step in a program of re-organization, the Registration Branch became a division of the Statistics Branch.

At December 31, 1960, the Board's staff totalled 910 as compared with 912 at the end of the previous year. The staff of the Canadian Government Elevators numbered 203, indicating a reduction of 31 during the year.

A chart of the Board's organization, including further details of staff location, follows this report.

Expenditure and Revenue

Total expenditure and accrued revenue of the Board, exclusive of the Canadian Government Elevators, for the fiscal year 1959-60 compared with 1958-59 was as follows:

	1959-60	1958-59
Expenditure	\$4,402,576.57	\$4,471,770.15
Revenue	2,604,923.85	2,793,669.51

Expenditure for the nine months of the 1960-61 fiscal year to December 31, 1960, totalled \$3,151,475 as against \$2,992,012 for the comparable period during 1959-60.

Cash revenue for the same nine-month period amounted to \$1,947,624 as compared with \$1,999,170 in the previous year.

Attached hereto is a series of Appendices which outline in greater detail the work of the Board's Branches.

Respectfully submitted,

R. W. MILNER,
Chief Commissioner

S. LOPTSON,
Commissioner

W. J. MacLEOD,
Secretary

GEO. N. McCONNELL,
Commissioner

Chief Commissioner - R. W. Milner
Commissioner - S. Loptson
Commissioner - G. N. McConnell

Chief Commissioner - R. W. Milner
Commissioner - S. Loftson
Commissioner - G. N. McConr

SECRETARY
W. J. MacLeod 7

PERSONNEL OFFICER
G. E. Rogers 6

ASSISTANT COMMISSIONERS

Winnipeg	W. S. Frazer	2
Regina	C. J. Hunt	2
Saskatoon	A. V. Svoboda	2
Edmonton	A. Rendfleisch	2

INSPECTION
Chief Inspector
M. J. Conacher

Winnipeg	158	Staff
Montreal	30	
Ottawa	2	
Chatham	7	
Toronto	2	
Fort William	181	
Keewatin	1	
Saskatoon	10	
Moose Jaw	3	
Medicine Hat	1	
Lethbridge	2	
Calgary	29	
Edmonton	34	
Vancouver	53	
Victoria	3	
Prince Rupert	3	
Baie Comeau	3	

GRAIN APPEAL TRIBUNALS

Winnipeg	1	Staff
Calgary	1	
Edmonton	1	

RESEARCH LAB.
Chief Chemist
Dr. J. A. Anderson

Winnipeg	Staff	52
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STATISTICS
Chief Statistician
E. E. Baxter

Winnipeg	42	Straff
Montreal	5	
Vancouver	3	

WEIGHING
Chief Weighman
J. J. Manson

Winnipeg	13	Staff
Montreal	2	
Fort William	156	
Keewatin	2	
Saskatoon	7	
Moose Jaw	4	
Medicine Hat	2	
Lethbridge	1	
Calgary	12	
Edmonton	4	
Vancouver	51	
Victoria	2	
Prince Rupert	3	

GOV'T. ELEVATORS
General Manager
A. F. Jacobson

Winnipeg	11	Staff
Saskatoon	41	
Moose Jaw	32	
Lethbridge	20	
Calgary	36	
Edmonton	32	
Prince Rupert	31	

APPENDIX A

Committee on Western Grain Standards as at December 31, 1960

R. W. Milner, Chief Commissioner, Board of Grain Commissioners.
S. Loptson, Commissioner, Board of Grain Commissioners.
G. N. McConnell, Commissioner, Board of Grain Commissioners.
M. J. Conacher, Chief Grain Inspector, Board of Grain Commissioners.
Dr. J. A. Anderson, Chief Chemist, Grain Research Laboratory.
D. E. Ross, Chairman, Grain Appeal Tribunal, Winnipeg.
R. E. Forrester, Chairman, Grain Appeal Tribunal, Calgary.
A. M. Creighton, Chairman, Grain Appeal Tribunal, Edmonton.
Dr. A. E. Hannah, Dominion Cerealists.
L. A. McCorquodale, representing the millers of wheat flour.

George Bennett }
W. H. Fairfield } Representing grain growers in Alberta.
B. S. Plumer }

J. H. Harrison }
A. P. Gleave } Representing grain growers in Saskatchewan.
J. Wellbelove }
L. L. Gray }
N. W. Strelloff }

W. J. Parker }
P. A. McPhail } Representing grain growers in Manitoba.
Ray Mitchell }

G. Constable, representing grain growers in British Columbia.
L. Bell, representing Plant Products Division, Department of Agriculture.

Committee on Eastern Grain Standards as at December 31, 1960

R. W. Milner, Chief Commissioner, Board of Grain Commissioners.
S. Loptson, Commissioner, Board of Grain Commissioners.
G. N. McConnell, Commissioner, Board of Grain Commissioners.
M. J. Conacher, Chief Grain Inspector, Board of Grain Commissioners.
W. G. Thomson, representing Montreal Board of Trade.
E. D. Sullivan, representing Toronto Board of Trade.
C. Gordon McAuley, representing exporters of grain.

F. H. Dunsford }
H. Norman Davis } Representing millers of wheat in the Eastern
Division.

J. R. Heaney }
A. McLean } Representing grain growers in Ontario.

G. C. Nichols, representing growers of corn.
P. Blouin, Additional.
A. Bowman, Additional.

APPENDIX B

Grain Appeal Tribunals

Winnipeg	Calgary	Edmonton
D. E. Ross (Chairman)	R. E. Forrester (Chairman)	A. M. Creighton (Chairman)
J. E. G. Hasell	G. R. Deeton	H. A. Haggarty
J. F. Lazenby	B. T. Jenkins	D. G. MacKeracher
Wm. E. McLeod	W. F. Fennell	C. E. Sage
G. I. Rocan	A. E. Longhurst	J. F. Schofield
E. A. Sangster	W. G. McLeod	T. Stickney
R. C. Sproule	W. M. Pringle	N. Topolnitsky
V. J. Stubbs	J. Tranter	M. G. Wood
G. A. Turner	J. D. Toomer	C. C. Young
N. Kawka (Secretary)		

Toronto	Montreal
C. H. Coatsworth	M. M. Ainslie, (Chairman)
J. Elder	P. Blouin
C. W. Heimbecker	S. Brooks
J. Jervis	J. A. Byrne
R. C. Pratt	E. B. Paterson
E. D. Sullivan	R. Strauss
A. L. Walker	Mrs. Muriel B. Hunter (Secretary)
D. C. Kay, Jr. (Secretary)	

For information on Appeals of Carlot Inspections refer to Appendix D, Table D-6.

APPENDIX C

Statistics Branch

E. E. BAXTER, *Chief Statistician*

(A) STATISTICS

The Statistics Branch receives reports from all elevators licensed under the Canada Grain Act and from these returns compiles and publishes basic statistics relating to the storage and handling of grain within the Canadian elevator system. It prepares audit statements of the operations of all terminal and eastern elevators, verifies the insurance carried on grain stocks and handles the record details relating to the amounts collected as the 1% levy under the Prairie Farm Assistance Act. It supplies for review by the Board a detailed analysis of all grain handlings and co-operates with other Board offices in the maintenance of detailed records of principal operations.

(B) LICENSING

The Canada Grain Act provides that no railway company or vessel shall receive any western grain from any elevator or discharge any such grain into any elevator unless such elevator is licensed by the Board. The Act also specifies the conditions by which grain dealers, track buyers or grain commission merchants must be licensed in order to engage in contracts dealing with western grain by grade name. Such elevator and dealers' licences are issued by the Board through the licensing division of the Statistics Branch. This office also supervises the implementation of Section 79-3 by which all such licensees must be secured by bond or otherwise for the performance of all obligations imposed upon them by the Act.

(C) REGISTRATION

Section 127 of the Canada Grain Act requires the operators or managers of public terminal, semi-public terminal and eastern elevators to issue warehouse receipts or transfer receipts for all grain taken into store. Regulations No. 1 and No. 2, made by the Board under the provisions of Section 15 (22) of the Canada Grain Act, require that all such warehouse receipts or transfer receipts be registered with the Board as to grade and quantity at the time of issue, and that these warehouse receipts or transfer receipts be surrendered to the Board for registration for cancellation when the grain which they represent has been shipped out.

Introductory Comment

The office consolidation program initiated during the previous year was further developed during the 1959-60 season. Preliminary arrangements were completed towards the inclusion of Registration Branch operations effective August 1, 1960. The adaption of registration records to machine accounting techniques presents special opportunities for greater integration of office operations both within the Board and between the Board, the grain companies and the Canadian Wheat Board. This latter development will be progressive over future years but could not be initiated until this step was effected. New techniques were developed and applied to the licence issue and records, further facilitating the work of both this office and the grain companies. Included were new procedures whereby the principal public record, "Grain Elevators in Canada" was available for release shortly after the opening of

the new crop year, a publishing schedule not possible under former methods, but of considerable value to grain and transportation companies.

The introduction of a provincial crop insurance scheme in Manitoba effective with the 1960 crop necessitated certain adjustments in the records and reports covering the collection by licensees of the 1% Prairie Farm Assistance Act levy. This office worked in close co-operation with the Provincial authorities and grain company representatives towards an interim procedure for the 1960-61 season. Further discussions are scheduled regarding the development of a working system to apply as the Crop Insurance Programs are extended.

(A) Statistics

The growing use of grain statistics in the daily operation of grain companies, transportation firms and government agencies continued to be reflected in an increasing demand for both regular bulletins and special studies. The flexibility of our statistical records achieved through electronic data processing greatly facilitated the work. Of special note were the additional and earlier bulletins on the licensing position. Special studies on the terminal handlings of particular grades were of significant value to the Inspection Branch in its development of new procedures. Other studies related to terminal operations and lake shipping were carried out for the use of the Weighing Branch. The office continued to perform service operations through its machine installation for the Research Laboratory, the Personnel Division and the Accounts Branch. Close liaison was maintained with related departments of the Canadian Wheat Board and all statistical records were available for their use to avoid duplication of statistical work between the two organizations.

The office continued its collaboration with the Agriculture Division of the Dominion Bureau of Statistics in the supply of grain statistics for its related publications. Historical records were also made available to the Royal Commission on Transportation. Co-operative exchange of statistics was maintained with corresponding units of the United States Department of Agriculture, the Food and Agriculture Organization in Rome and the Commonwealth Economic Committee in London.

The responsibility of the office under provisions of the Inland Water Freight Rates Act was again of particular significance as vessel charter confirmations covering all lake grain cargoes shipped from Fort William-Port Arthur were examined and data tabulated to keep the Board advised on lake shipping charges. Charter confirmations were recorded covering 902 separate inland cargoes moving between the Canadian Lakehead and Eastern Canadian ports in vessels of Canadian and Commonwealth registry between the period April 10 to December 13.

A special review involving the refinement of policy wordings was made with respect to country elevator fire policies on grain stocks. The responsibility of the Branch under Section 102 of the Canada Grain Act was carefully discharged both in the above and in the regular examination of insurance reports and documents related to insurance coverage in country, terminal and eastern licensed storage positions.

Audit examination was conducted in connection with the weighover of 2,101 country elevators, 21 semi-public terminal elevators, 4 private terminal and 20 eastern elevators. Special statistical studies were prepared to supplement the regular audits and to further facilitate Board analysis of the accounting statements. Details of the accounting statements prepared in accordance with Sections 139 and 140 of the Canada Grain Act are summarized in Tables C-12 to C-14 inclusive, of this Appendix.

The collection of the 1% levy made under provisions of Section 11 of the Prairie Farm Assistance Act and under authority delegated to this office involved 1959-60 returns totalling \$6,326,924.00, a reduction of \$347,074.00 from levy remittances during 1958-59. The decline reflected the lighter marketing volume and a different grain and grade composition.

(B) Licensing

During the initial licensing period of the crop year 1959-60 from August 1 to December 1, 1959, 5,469 licences were issued to 97 firms and individuals. Included in these were 47 licences granted to Track Buyers, Commission Merchants and Grain Dealers. In addition, country elevator licensees were authorized to use 169 off-site grain storage buildings of various types.

In the course of the crop year twenty-one licences were cancelled, by reason that two elevators were destroyed by fire; sixteen were wrecked or dismantled; two were converted to annexes, and one application was withdrawn. Fifty-seven authorizations for grain storage buildings involving 4.2 million bushels of space were also cancelled during the crop year as the stored grain was moved to terminal positions.

Nineteen country elevator licences were suspended during renovation and reconstruction of buildings. Sixteen of these were reinstated; one was cancelled, and two, still under suspension at the end of the crop year, were not submitted for renewal at the beginning of August, 1960.

Guarantee bonds in the amount of \$30,641,275.00 executed by 13 approved surety companies were deposited with the Board as security under Section 79 of the Canada Grain Act to cover operations of licensees during 1959-60. No negotiable Government bonds were deposited in lieu of the usual form of surety bond.

As at July 31, 1960, with 5,413 elevator licences and 147 grain storage building authorities in force, the licensed storage capacity was 631,884,110 bushels in elevators and 7,170,500 bushels in grain storage buildings, a decrease in the total licensed storage capacity of 2,891,640 bushels since July 31, 1959. The total licensed storage capacities by provinces are: Manitoba, 59.1; Saskatchewan, 208.3; Alberta, 137.2; British Columbia, 28.0; Ontario, 154.1; Quebec, 45.2, and the Maritimes, 7.2 million bushels.

The major changes in the composition of this storage were reductions of 16.1 million bushels in country elevator storage and 4.2 millions in grain storage building capacity, and the increase of 17.4 millions in terminal and eastern elevator facilities including the construction of a complete new elevator at Baie Comeau.

(C) Registration

Due, primarily, to the very large quantities of damp and tough grain that were received by semi-public terminal elevators to allow for artificial drying of the grain to prevent spoilage, the offices in the Western Division experienced one of the most difficult operational years in the history of the Branch. The total number of warehouse receipts submitted for registration was considerably in excess of that of other years, particularly in the case of the Lakehead group of elevators, as a separate warehouse receipt was required to be registered for each carlot of damp or tough grain received.

Calculation of the drying shrinkage was also required to be made for each carlot as it was dried and a new warehouse receipt registered for the dried weight. The total number of warehouse receipts handled through these offices exceeded that of 1951-52, the previous record crop year but, due to experience gained in that year, plus improved operational procedures, service was maintained at proper levels without increase in staff.

Records were kept for each licensee in both the Eastern and Western Divisions, by grade, showing the total quantities registered, cancelled and outstanding each day with a breakdown of this data to provide total receipts, shipments, natural and artificial drying and grade adjustments for the crop year. A separate series of records also maintained for each licensee provided a complete registration and cancellation record of all warehouse receipts or transfer receipts that were issued. Grade adjustments, as reported daily by the licensees of semi-public terminal elevators, were carefully scrutinized to see that they conformed to the non-mixing provisions of the Canada Grain Act. Certified statements of outstanding warehouse receipt and transfer receipt grade totals together with the total handlings of the non-mixing grades of wheat and other relevant information, were supplied as required for use in summarizing the results of the annual weighover of stocks of grain as carried out by Board officials at terminal and Eastern elevators.

Registration service was also provided to licensees of elevators in the Western Division for warehouse receipts that were required to be split, consolidated, re-issued or adjusted for grade to facilitate documentation in connection with the handling of the grain.

While the total number of warehouse receipts submitted for registration during the year increased materially, the total handlings of primary receipts and shipments at these elevators, for the crop year 1959-60, shows a decline when compared to the ten-year average at all points except Vancouver.

Fees for registration service were charged at the rate of 4 cents a thousand bushels for registration and for registration for cancellation in the Western Division, and one cent a thousand bushels for registration and for registration for cancellation in the Eastern Division. The overall decrease in handlings of primary receipts and shipments is reflected in the total fees collected for the period under review of \$44,942.56 as compared to the ten-year average of \$49,533.05.

General

Summary grain statistics with respect to the 1959-60 crop year and the 1960 season of navigation are presented in table form following this section. Complete details are published in the various regular and periodical bulletins of the Branch, in the Branch's export release, "Canadian Grain Exports 1959-60", and in the "Grain Trade of Canada" issued jointly by this office and the Agriculture Division of the Dominion Bureau of Statistics. Details of licences issued under the Canada Grain Act are carried in the publication "Grain Elevators in Canada". Table C-19 of this Appendix presents the total bushels, by grains, for which warehouse receipts or transfer receipts were registered and/or registered for cancellation at offices of the Board maintained for this purpose at Montreal, Winnipeg and Vancouver.

Table C-1.—Supply and Disposition of Canadian Grain, Crop Year 1959-60

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
SUPPLY					
Carry-over July 31st, 1959.....	549,001,464	118,978,700	128,153,215	7,919,805	6,523,126
Production in 1959.....	413,520,000	417,933,000	225,550,000	8,149,000	17,719,000
Total Supply	962,521,464	536,911,700	353,703,215	16,068,805	24,242,126
DISPOSITION					
Exported Overseas.....	270,044,404	4,520,484	44,166,719	451,913	12,494,273
Exported to U.S.A.....	2,087,750	1,103,771	13,525,895	4,062,776	—
Consumed in Canada.....	152,801,174	438,459,953	174,540,951	4,800,725	6,873,461
Total Disposition	424,933,328	444,084,208	232,233,565	9,315,414	19,367,734
CARRY-OVER (July 31st, 1960)					
On Farms (Estimated).....	81,700,000	72,000,000	63,000,000	3,800,000	810,000
In Country, Private Terminal and Mill Elevators.....	268,279,153	15,938,212	44,773,532	1,894,554	1,221,530
In Semi-Public Terminal Elevators.....	84,020,771	1,436,889	8,698,409	525,254	1,575,240
In Store at and Afloat to Eastern Elevators.....	80,369,247	2,056,575	2,434,639	141,679	904,321
In Eastern Flour Mills.....	2,485,085	195,067	25,095	—	—
In Transit by Rail—Eastern and Western Divisions.....	20,733,880	1,200,749	2,537,975	220,153	363,301
In Store and in Transit to the United States.....	—	—	—	171,751	—
Total in Store July 31st, 1960	537,588,136	92,827,492	121,469,650	6,753,391	4,874,392

**Table C-2.—Production and Producers' Marketings in Western Canada,
by Provinces, Crop Year 1959-60**

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
PRODUCTION (DBS Estimate)					
Manitoba.....	60,000,000	61,000,000	35,000,000	1,660,000	4,600,000
Saskatchewan.....	232,000,000	94,000,000	74,000,000	3,000,000	6,300,000
Alberta and British Columbia	108,165,000	112,400,000	111,636,000	1,741,000	6,711,000
Totals.....	400,165,000	267,400,000	220,636,000	6,401,000	17,611,000
PRODUCERS' MARKETINGS					
(a) At Country Elevators					
Manitoba.....	48,155,509	7,212,110	17,752,572	1,075,888	3,246,308
Saskatchewan.....	235,215,202	8,035,333	35,396,702	2,219,567	5,094,395
Alberta.....	91,696,686	8,533,026	42,052,641	982,029	5,223,983
Totals.....	375,067,397	23,780,469	95,201,915	4,277,484	13,564,686
(b) At Interior Semi-Public Terminals					
Manitoba.....	53,411	16,875	14,845	—	—
Saskatchewan.....	—	—	—	—	—
Alberta.....	117,351	23,168	31,558	—	744
Totals.....	170,762	40,043	46,403	—	744
(c) At Interior Private and Mill Elevators					
Manitoba.....	207,911	42,895	85,381	—	92,997
Saskatchewan.....	1,839,458	113,270	73,135	224	116,933
Alberta.....	1,187,983	347,822	110,594	10,122	167,184
Totals.....	3,235,352	503,987	269,110	10,346	377,114
(d) Loaded over Platforms					
Manitoba.....	3,565	13,982	2,516	1,607	2,726
Saskatchewan.....	30,436	—	1,876	1,684	1,373
Alberta.....	6,443	—	69,001	—	13,985
Totals.....	40,444	13,982	73,393	3,291	18,084
Total Producers' Marketings					
Manitoba.....	48,420,396	7,285,862	17,855,314	1,077,495	3,342,031
Saskatchewan.....	237,085,096	8,148,603	35,471,713	2,221,475	5,212,701
Alberta.....	93,008,463	8,904,016	42,263,794	992,151	5,405,896
Totals.....	378,513,955	24,338,481	95,590,821	4,291,121	13,960,628

Table C-3.—Receipts and Shipments of Canadian Grain at Terminal Elevators, Crop Year 1959-60

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
Fort William-Port Arthur—					
Receipts.....	201,982,753	26,306,137	59,534,766	3,901,524	7,988,815
Shipments.....	188,384,940	31,157,056	64,183,759	4,111,394	7,490,501
Vancouver-New Westminster—					
Receipts.....	92,045,092	2,681,272	23,237,523	369,366	5,986,018
Shipments.....	92,865,941	3,421,147	23,255,372	326,984	6,296,049
Victoria—					
Receipts.....	3,042,523	554	207	283	422,474
Shipments.....	2,859,621	17,965	2,802	—	444,083
Prince Rupert—					
Receipts.....	—	—	9,535,127	—	—
Shipments.....	—	—	8,896,325	—	—
Churchill—					
Receipts.....	21,792,231	1,110	—	—	—
Shipments.....	21,700,046	175,953	—	—	—
Transcona—					
Receipts.....	112,492	23,182	26,555	4,045	660
Shipments.....	80,084	56,561	35,311	4,045	660
Calgary—					
Receipts.....	1,573,702	—	1,990,623	—	5,468
Shipments.....	1,544,208	6,477	2,071,605	—	5,468
Edmonton—					
Receipts.....	1,952,205	45,926	47,142	—	4,530
Shipments.....	2,289,058	63,521	39,816	—	4,174
Lethbridge—					
Receipts.....	352,864	—	—	1,664	30,089
Shipments.....	281,712	—	—	1,664	30,089
Moose Jaw—					
Receipts.....	7,600	151,046	2,058	1,604	1,422
Shipments.....	28,123	151,046	2,058	1,604	1,422
Saskatoon—					
Receipts.....	253,093	45,182	—	—	35,467
Shipments.....	1,061,183	11,059	—	—	34,838
Total Receipts.....	323,114,555	29,254,409	94,374,001	4,278,486	14,474,943
Total Shipments.....	311,094,916	35,060,785	98,487,048	4,445,691	14,307,284

Table C-4.—Shipments of Foreign Grain From Canadian Elevators into Canadian Consumer Channels, Crop Year 1959-60

From	United States Flaxseed	United States Corn	United States Soybeans	South African Corn
	bu.	bu.	bu.	bu.
Eastern Elevators.....	98,571	7,637,186	2,159,312	49,803
Fort William-Port Arthur.....	—	—	—	—
Interior Terminals.....	—	—	—	—
Interior Private and Mill Elevators.....	—	888,036	—	—
Pacific Coast Elevators.....	—	—	—	—

Table C-5.—Primary Receipts and Shipments at Eastern Elevators, Crop Year 1959-60

	Receipts	Shipments
CANADIAN GRAIN	bu.	bu.
Wheat.....	182,601,602	165,208,357
Oats.....	30,048,152	31,012,488
Barley.....	33,375,622	34,224,344
Rye.....	1,158,825	1,226,365
Flaxseed.....	5,739,430	5,954,548
Corn.....	2,509,125	2,376,888
Soybeans.....	3,385,320	3,268,331
Buckwheat.....	85,041	81,773
Peas.....	112,706	109,200
Rapeseed (lbs.).....	2,045,360	2,045,360
Mixed Grain (lbs.).....	2,221,392	570,000
Sample Grain (lbs.).....	17,117,093	15,901,262
UNITED STATES GRAIN		
Wheat.....	4,341,170	4,376,193
Oats.....	360,126	357,160
Barley.....	1,141,046	1,198,021
Rye.....	612,566	612,566
Flaxseed.....	1,235,077	1,432,641
Corn.....	19,113,884	18,606,563
Soybeans.....	6,084,543	5,495,205
Mixed Grain (lbs.).....	3,965,450	3,965,450
FOREIGN GRAIN		
South African Corn.....	—	49,803

Table C-6.—Supply and Disposition of Canadian Grain in United States Positions, Crop Year 1959-60

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
SUPPLY					
In Store and in Transit U.S.A.....	159,089	—	—	—	—
Receipts direct from Canada.....	2,810,856	1,103,771	13,525,895	4,214,776	—
Total Supply.....	2,969,945	1,103,771	13,525,895	4,214,776	—
DISPOSITION					
Exported.....	136,788	—	—	—	—
Returned to Canada.....	745,407	—	—	—	—
Used Domestically.....	2,087,750	1,103,771	13,525,895	4,062,776	—
Total Disposition.....	2,969,945	1,103,771	13,525,895	4,062,776	—
In Store and in Transit July 31, 1960	—	—	—	152,000	—

Table C-7—Exports of Canadian Wheat, by Seaboard Sectors, by Months, Crop Year 1959-60

	Via Canadian Pacific Ports	Via Canadian St. Lawrence- Atlantic Ports	Via Churchill	Via Fort- William- Port Arthur Direct	Via United States Atlantic Ports	United States Imports ¹		Total All Wheat	Wheat Flour ²	Total Wheat and Wheat Flour
						For Domestic Use	Milling in Bond			
1959	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.
August.....	6,979,151	5,783,555	8,096,226	334,285	—	10,100	—	21,203,317	3,194,429	24,397,746
September.....	6,862,447	5,091,949	9,368,759	1,041,067	—	131,751	110,000	22,605,973	3,547,338	26,153,311
October.....	6,027,459	11,433,133	3,693,727	1,186,818	—	99,180	—	22,440,317	3,059,255	25,499,572
November.....	7,977,540	19,981,155	—	1,196,652	—	83,346	—	29,238,693	3,312,361	32,551,054
December.....	7,550,262	12,540,967	—	—	136,788	34,456	—	20,262,473	3,558,579	23,821,052
1960										
January.....	7,150,150	6,056,821	—	—	—	12,729	—	13,219,700	3,076,181	16,295,881
February.....	10,986,416	5,470,615	—	—	—	5,000	—	16,462,031	2,617,345	19,079,376
March.....	9,707,655	7,375,023	—	—	—	19,067	—	17,101,745	2,616,820	19,718,565
April.....	4,776,360	10,260,307	—	306,557	—	29,497	—	15,372,721	2,507,619	17,880,340
May.....	8,384,979	9,545,702	—	1,976,670	—	1,183,600	119,000	21,209,951	3,840,963	25,050,914
June.....	10,472,560	9,880,367	—	558,874	—	99,190	—	21,010,991	2,465,765	23,476,756
July.....	8,193,014	4,981,127	541,333	722,797	—	150,834	—	14,589,105	3,618,482	18,207,587
Total Crop Year 1959-60...	95,067,993	108,400,721	21,700,045	7,323,720	136,788	1,858,750	229,000	234,717,017	37,415,137	272,132,154
Total Crop Year 1958-59...	106,547,195	118,857,043	18,409,322	4,979,236	—	1,953,931	1,408,216	252,154,943	37,124,914³	289,279,857
5-Year Average 1954-55 to 1958-59.....	103,711,531	121,183,272	15,623,725	1,028,262	148,638	4,366,810	1,252,518	247,314,756	38,333,378	285,648,134

¹ Compiled from returns of Canadian elevator licensees and shippers and advice from American grain correspondents.

² Canadian Customs returns converted to bushels—unadjusted for time lag.

³ Revised—adjusted to remove effect of time lag in reports made by the Customs.

**Table C-8—Overseas Exports of Canadian Grain, by Seaboard Sectors,
by Grades, Crop Year 1959-60**

Grades	Via Canadian Pacific Ports	Via Canadian St. Lawrence- Atlantic ¹ Ports	Via Churchill	Via Ft. William- Port Arthur direct	Via United States Atlantic Ports	Total
	bu.	bu.	bu.	bu.	bu.	bu.
WHEAT—						
1 Manitoba Northern.....	1,716,108	995,404	93,333	—	—	2,804,845
2 Manitoba Northern.....	21,416,688	33,054,763	11,930,737	2,698,305	—	69,100,493
3 Manitoba Northern.....	34,483,081	33,357,770	8,076,222	2,302,300	—	78,219,373
4 Manitoba Northern.....	26,488,026	12,072,998	1,144,775	664,658	—	40,507,245 ²
No. 5.....	9,493,860	4,002,918	277,336	—	—	13,774,114
Garnet.....	162,629	—	—	—	—	162,629
Alberta Winter.....	558,134	—	—	—	—	558,134
Other Western.....	749,467	1,611,225	177,642	1,123,018	—	3,661,352
Eastern.....	—	1,318	—	—	—	1,318
2 C.W. Amber Durum.....	—	6,075,835	—	304,566	—	6,380,401
3 C.W. Amber Durum.....	—	8,033,481	—	37,334	—	8,070,815
Ex. 4 C.W. Amber Durum.....	—	5,642,479	—	143,699	—	5,786,178
4 C.W. Amber Durum.....	—	3,533,863	—	49,840	—	3,583,703
5 C.W. Amber Durum.....	—	18,667	—	—	—	18,667
Totals.....	95,067,993	108,400,721	21,700,045	7,323,720	—	232,629,267²
OATS—						
3 C.W.....	—	8,235	—	—	—	8,235
Ex. 1 Feed.....	939,516	133,574	—	119,114	—	1,192,204
1 Feed.....	1,528,653	40,706	—	111,474	—	1,680,833
Mixed Feed.....	265,900	944,015	138,353	197,647	—	1,545,915
Eastern.....	—	93,297	—	—	—	93,297
Totals.....	2,734,069	1,219,827	138,353	428,235	—	4,520,484
BARLEY—						
2 C.W. Six Row.....	91,666	—	—	—	—	91,666
3 C.W. Six Row.....	2,135,992	35,000	—	384,069	—	2,555,061
4 C.W. Six Row.....	451,773	144,312	—	—	—	596,085
2 C.W. Two Row.....	81,067	—	—	—	—	81,067
3 C.W. Two Row.....	5,837,827	—	—	—	—	5,837,827
1 Feed.....	20,698,686	571,973	—	—	—	21,270,659
2 Feed.....	2,554,617	4,196,945	—	6,882,995	—	13,634,557
3 Feed.....	—	41,464	—	—	—	41,464
Other Western.....	—	58,333	—	—	—	58,333
Totals.....	31,851,628	5,048,027	—	7,267,064	—	44,166,719
RYE—						
2 C.W.....	312,134	139,779	—	—	—	451,913
Totals.....	312,134	139,779	—	—	—	451,913
FLAXSEED—						
1 C.W.....	6,504,978	2,515,913	—	1,344,505	—	10,365,396
2 C.W.....	210,369	1,194,268	—	388,940	—	1,793,577
3 C.W.....	74,143	201,157	—	60,000	—	335,300
Totals.....	6,789,490	3,911,338	—	1,793,445	—	12,494,273

¹ Includes clearances of wheat direct overseas from Sarnia, Ontario.

² Includes 136,788 bushels 4 Manitoba Northern shipped from U.S.A. Lake Ports.

Table C-9—Overseas Exports of Canadian Grain, by Ports, Crop Year 1959-60

Loaded at	Wheat (All varieties)	Oats	Barley	Rye	Flaxseed	Total All Grains
	bu.	bu.	bu.	bu.	bu.	bu.
Vancouver-New Westminster	92,246,198	2,719,180	22,956,224	312,134	6,344,320	124,578,056
Victoria	2,821,795	14,889	—	—	445,170	3,281,854
Prince Rupert	21,700,045	138,353	8,895,404	—	—	8,895,404
Churchill	7,323,720	428,235	—	—	—	21,838,398
Fort William-Port Arthur direct	106,400	—	7,267,064	—	1,793,445	16,812,464
Sarnia	48,341,600	1,055,034	3,204,010	89,856	3,351,467	56,041,967
Montreal	16,841,766	—	116,940	—	—	16,958,706
Sorel	11,432,086	—	244,677	—	—	11,676,763
Three Rivers	7,021,545	—	1,482,400	—	—	8,503,945
Quebec	332,470	—	—	—	—	332,470
Baie Comeau	1,829,735	—	—	—	—	1,829,735
Saint John	12,553,269	164,793	—	49,923	559,871	13,327,856
West Saint John	9,941,850	—	—	—	—	9,941,850
Halifax	—	—	—	—	—	—
Totals—Canadian Ports	232,492,479	4,520,484	44,166,719	451,913	12,494,273	294,125,868
U.S.A. Ports	136,788	—	—	—	—	136,788
Totals to Overseas	232,629,267	4,520,484	44,166,719	451,913	12,494,273	294,262,656
Wheat Flour ¹	37,415,137	—	—	—	—	37,415,137
U.S.A. Imports ²	2,087,750	1,103,771	13,525,895	4,062,776	—	20,780,192
Grand Totals	272,132,154	5,624,255	57,692,614	4,514,689	12,494,273	352,457,985

¹ Canadian Customs Returns—converted to bushels.

² Compiled from returns of Canadian Elevator licensees and shippers and advice from American grain correspondents.

Table C-10—Tough and Damp Grain Dried, by Storage Position, Crop Year 1959-60

	Artificial Drying			Natural Drying	Total
	Tough	Damp	Tough and Damp		
LAKEHEAD	bu.	bu.	bu.	bu.	bu.
Wheat.....	11,835,869	14,170,340	26,006,209	11,803,198	37,809,407
Durum.....	72,921	257,806	330,727	213,679	544,406
Oats.....	165,057	405,608	570,665	533,436	1,104,101
Barley.....	291,533	1,043,132	1,334,665	2,227,751	3,562,416
Rye.....	6,028	19,876	25,904	86,452	112,356
Flaxseed.....	923,953	1,133,221	2,057,174	528,264	2,585,438
Totals	13,295,361	17,029,983	30,325,344	15,392,780	45,718,124
PACIFIC COAST					
Wheat.....	12,082,872	5,151,689	17,234,561	4,601,616	21,836,177
Oats.....	77,093	19,524	96,617	306,906	403,523
Barley.....	1,920,948	986,857	2,907,805	2,213,795	5,121,600
Rye.....	—	—	—	27,500	27,500
Flaxseed.....	17,237	15,068	32,305	515,298	547,603
Totals	14,098,150	6,173,138	20,271,288	7,665,115	27,936,403
INTERIOR					
Wheat.....	860,581	1,864,896	2,725,477	—	2,725,477
Oats.....	97	5,677	5,774	—	5,774
Barley.....	—	3,748	3,748	—	3,748
Flaxseed.....	—	5,158	5,158	—	5,158
Totals	860,678	1,879,479	2,740,157	—	2,740,157
CHURCHILL					
Wheat.....	—	—	—	237,348	237,348
Totals, All Positions	28,254,189	25,082,600	53,336,789	23,295,243	76,632,032

Table C-11—Weighted Average Lake Freight Rates on Canadian Grain from Fort William-Port Arthur, Season of Navigation 1960

Port of Discharge	Wheat	Oats	Barley	Rye	Flaxseed
Georgian Bay Ports, Goderich, Sarnia and Walkerville.....	5.045	4.679	5.022	5.477	—
Port Colborne.....	6.5	6.0	6.358	6.5	—
Toronto.....	7.0	6.5	7.163	7.0	7.5
Kingston.....	7.75	7.0	7.25	—	—
Prescott.....	8.015	7.25	7.524	—	—
Montreal (Direct).....	13.0	10.113	12.460	13.0	14.0
Montreal via Port Colborne.....	14.084	—	—	—	—
Montreal via Toronto.....	14.0	—	—	—	—
Montreal via Kingston.....	14.0	10.867	12.316	14.0	14.313
Montreal via Prescott.....	13.627	10.5	12.5	—	14.631
Sorel (Direct).....	13.0	10.0	12.3	—	—
Sorel via Port Colborne.....	14.0	—	—	—	—
Sorel via Kingston.....	14.0	—	—	—	—
Sorel via Prescott.....	14.0	—	—	—	—
Three Rivers (Direct).....	13.0	10.105	12.405	—	—
Three Rivers via Bay Ports.....	14.0	—	—	—	—
Three Rivers via Port Colborne.....	14.0	—	—	—	—
Three Rivers via Toronto.....	14.0	—	—	—	—
Quebec (Direct).....	13.0	10.037	12.330	—	—
Quebec via Kingston.....	—	10.5	—	—	—
Baie Comeau.....	13.0	—	—	—	—
Baie Comeau via Port Colborne.....	14.0	—	—	—	—
Halifax.....	17.678	17.0	18.312	18.5	—
Port Williams.....	30.0	22.0	25.0	—	—
Point du Chene.....	19.0	17.5	18.0	—	—
Buffalo.....	8.0	7.5	7.766	8.0	—
Chicago.....	7.367	—	6.294	6.641	—
Duluth-Superior.....	5.645	—	5.262	—	—
Manitowoc.....	—	—	6.550	—	—
Milwaukee.....	6.632	—	6.414	6.5	—
Oswego.....	—	—	9.0	—	—

Note—Rates originally quoted in United States Funds have been converted to Canadian currency at the prevailing rates of exchange.

Table C-12.—Excesses and Deficiencies in Specified Grades of Wheat Disclosed by Weighovers of Grain Stored in SEMI-PUBLIC
TERMINAL Elevators, Crop Year 1959-60

Date of Weighover	Licensee	EXCESS					DEFICIENCY					
		No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 2 Canada Western Garnet
		bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.
	FORT WILLIAM—PORT ARTHUR The Fort William Elevator Co. Ltd.											
Dec. 28, 1959— Jan. 5, 1960	Empire	—	—	—	—	—	—	1,953.3	656.3	1,105.9	—	—
Dec. 14-21, 1959	Elevator "E"	—	—	—	—	—	—	—	—	—	—	—
Dec. 15-18, 1959	Lakehead Terminals Ltd.	—	—	—	—	—	—	36.8	760.9	1,010.9	—	—
Jan. 11-15, 1960	Manitoba Pool Elevators Elevator No. 1	—	—	—	—	—	—	15.9	4,044.2	2,949.2	—	—
Dec. 14-17, 1959	McCabe Grain Co. Ltd.	—	304.9	—	—	—	—	—	10,008.7	12,688.5	—	—
Dec. 15-23, 1959	National Grain Co. Ltd.	—	—	—	—	—	—	230.4	7,147.1	13,055.5	—	—
Nov. 9-13, 1959	Ogilvie Flour Mills Co. Ltd.	—	—	—	—	—	—	62.8	391.5	7,752.9	—	—
Dec. 22, 1959— Jan. 8, 1960	Saskatchewan Wheat Pool Elevator No. 4	—	—	—	—	—	—	4,335.8	27,251.3	22,343.7	—	—
Dec. 8-12, 1959	Elevator No. 5	—	—	—	—	—	—	60.8	9,749.9	2,626.9	—	—
Dec. 14-23, 1959	Searle Grain Co. Ltd.	—	—	—	—	—	—	3,243.5	22,401.9	18,544.9	—	—
Dec. 15-18, 1959	Superior Elevator Co. Ltd.	—	1,140.3	1,468.5	—	—	—	—	—	4,653.5	—	—
Sept. 30— Oct. 6, 1959	United Grain Growers Ltd. Thunder Bay	—	1,048.1	923.5	—	—	—	—	—	5,407.9	—	—

Table C-12.—Excess and Deficiencies in Specified Grades of Wheat Disclosed by Weighovers of Grain Stored in SEMI-PUBLIC
TERMINAL Elevators, Crop Year 1959-60—Continued

Date of Weighover	Licensee	EXCESS					DEFICIENCY					
		No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 2 Canada Western Garnet
		bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.
Aug. 3-15, 1959	VANCOUVER-NEW WESTMINSTER Alberta Wheat Pool	—	—	—	—	—	—	772.1	45,899.4	46,026.9	—	—
June 27-30, 1960	Burrard Terminals Ltd.	—	335.0	—	—	—	—	—	7,473.0	9,087.7	—	3,958.4
Mar. 24-31, 1960	Pacific Elevators Ltd.	—	—	—	—	—	—	30.1	1,919.6	1,385.9	—	—
Mar. 29- Apr. 4, 1960	Elevator No. 2	—	—	—	—	—	—	73.1	4,525.3	—	—	—
	Elevator No. 4	—	—	—	2,159.3	—	—	—	—	—	—	—
Sept. 4-12, 1959	United Grain Growers Ltd.	—	—	—	—	—	—	473.9	4,492.4	7,095.5	—	—
June 28- July 13, 1960	Elevator No. 3 (N.H.B.)	—	—	—	—	—	—	48.1	9,805.8	9,683.4	—	2,150.7
	Elevator No. 3 (N.H.B.)	—	—	—	—	—	—	—	—	—	—	—
	CHURCHILL, MAN.											
Oct. 20-24, 1959	National Harbours Board	—	—	—	—	—	—	1.9	792.6	1,182.4	—	—
	CALGARY, ALTA.											
Aug. 24-28, 1959	Canadian Government Elevator	—	—	—	—	—	—	10.1	129.9	646.2	—	—
	EDMONTON, ALTA.											
Aug. 13-21, 1959	Canadian Government Elevator	—	—	—	—	—	—	5.1	1,522.6	4.3	—	—

Note—United Grain Growers Ltd., Elevator A, weighed over Sept. 30-Oct. 9, 1959 to determine losses resulting from collapse of annex.

Table C-13—Excesses and Deficiencies in Specified Grades of Wheat disclosed by Weighovers of Grain Stored in PRIVATE TERMINAL Elevators, Crop Year 1959-60

Date of Audit, December 7, 1959	Winnipeg, Manitoba Canada Malting Co. Ltd.	
	Excess	Deficiency
	bu.	bu.
No. 1 Manitoba Hard.....	—	—
No. 1 Manitoba Northern.....	—	—
No. 2 Manitoba Northern.....	—	15.1
No. 3 Manitoba Northern.....	—	20.1
No. 1 Canada Western Garnet.....	—	—
No. 2 Canada Western Garnet.....	—	—

No wheat of the above grades was handled or in store in the following elevators:

Date of Weighover	Elevator Company	Location
March 16, 1960.....	Canada Malting Co. Ltd.....	Port Arthur, Ontario
December 7, 1959.....	Dominion Malting Co. Ltd.....	Transcona, Manitoba
February 8, 1960.....	National Grain Feed Mill.....	Fort William, Ontario

Table C-14—Overages and Shortages Disclosed by Weighovers of Canada Western and Foreign Grain Stored in Eastern Elevators, Crop Year 1959-60

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1960			bu.	bu.
Feb. 9-17	COLLINGWOOD Collingwood Terminals Ltd.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... Canada Western Screenings.....	— — — —	1,735.1 997.7 485.9 *9,470
Mar. 28- Apr. 7	GODERICH Goderich Elevator and Transit Co. Ltd.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... Canada Western Rye..... Canada Western Screenings..... U.S.A. Corn.....	— 1,933.4 — — — —	3,904.0 — 1,783.1 164.9 *68,810 663.1
Feb. 1-12	HUMBERSTONE Robin Hood Flour Mills Ltd.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley.....	— — —	9,754.0 51.1 82.2
Feb. 8-13	KINGSTON Canada Steamship Lines Ltd.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... Canada Western Rye..... Canada Western Flaxseed..... U.S.A. Oats..... U.S.A. Barley..... U.S.A. Rye..... U.S.A. Flaxseed..... U.S.A. Corn.....	— — — — — — — — — —	6,400.5 1,567.3 620.9 135.4 877.8 227.9 65.9 67.0 345.1 1,879.4
May 19	LAKEFIELD Lakefield Elevator Co. Ltd.....	Canada Western Wheat.....	—	3,006.0
Feb. 15- Mar. 7	MIDLAND Canada Steamship Lines Ltd.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... U.S.A. Corn.....	— — 29.6 —	3,748.8 763.0 — 207.8

Table C-14—Overages and Shortages Disclosed by Weighovers of Canada Western and Foreign Grain Stored in Eastern Elevators, Crop Year 1959-60—Continued

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1960			bu.	bu.
Mar. 21-Apr. 1	Canadian National Railways.....	Canada Western Wheat.....	—	5,926.7
Mar. 15-31	Midland Simcoe Elevator Co. Ltd.....	Canada Western Wheat.....	—	1,336.7
		Canada Western Oats.....	—	2,857.4
		Canada Western Barley.....	341.6	—
Mar. 8-18	Renown Investments Ltd.....	Canada Western Wheat.....	—	1,371.2
Mar. 18-23	MONTREAL Dominion Elevator Ltd.....	Canada Western Wheat.....	—	1,793.7
		Canada Western Oats.....	—	1,202.6
		Canada Western Barley.....	—	858.0
		Canada Western Flaxseed.....	—	6.3
		Canada Western Sample Grain..	—	*18,640
		Canada Western Screenings.....	—	* 4,880
		U.S.A. Corn.....	—	63.1
		U.S.A. Soybeans.....	—	2.5
Jan. 13-Feb. 29	National Harbours Board.....	Canada Western Wheat.....	—	170,956.9
		Canada Western Oats.....	—	851.0
		Canada Western Barley.....	—	49,781.3
		Canada Western Rye.....	—	13,468.7
		Canada Western Flaxseed.....	—	12,107.0
		Canada Western Buckwheat.....	—	306.3
		Canada Western Peas.....	—	395.7
		Canada Western Mixed Grain...	*1,725,760	—
		Canada Western Sample Grain..	* 70,120	—
		Canada Western Sample (Miscellaneous).....	—	* 2,530
		Canada Rapeseed.....	—	*39,680
		Canada Western Screenings.....	—	*10,030
		Sample Canadian Red Spring and U.S.A. Winter Wheat.....	—	2.8
		U.S.A. Wheat.....	—	2,415.0
		U.S.A. Oats.....	—	297.4
		U.S.A. Barley.....	—	1,455.4
		U.S.A. Rye.....	—	219.5
		U.S.A. Flaxseed.....	—	8,976.9
		U.S.A. Corn.....	—	8,461.3
		U.S.A. Buckwheat.....	—	9.2
		U.S.A. Soybeans.....	200.9	—
		U.S.A. Rice.....	—	84.5
		Iran Rice.....	—	30.1
		S.A. Corn.....	—	730.0
Feb. 18-Mar. 14	OWEN SOUND Great Lakes Elevator Co. Ltd.....	Canada Western Wheat.....	—	8,709.7
		Canada Western Oats.....	—	2,275.3
		Canada Western Barley.....	—	1,645.0
		Canada Western Sample Feed Grain.....	*24,310	—
		Canada Western Screenings.....	—	*58,990
Jan. 25-29	PORT COLBORNE Maple Leaf Milling Co. Ltd.....	Canada Western Wheat.....	—	7,192.4
		Canada Western Oats.....	112.8	—
		Canada Western Barley.....	—	620.3
		Canada Western Rye.....	—	221.7
		U.S.A. Flaxseed.....	—	39.3
		U.S.A. Corn.....	—	107.7
		U.S.A. Soybeans.....	—	112.4

Table C-14—Overages and Shortages Disclosed by Weighovers of Canada Western and Foreign Grain Stored in Eastern Elevators, Crop Year 1959-60—Concluded

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1960			bu.	bu.
Sept. 9-11 1959	National Harbours Board.....	Canada Western Wheat.....	—	9,867.3
		Canada Western Oats.....	—	1,556.8
		Canada Western Barley.....	—	2,165.1
		Canada Western Rye.....	—	209.7
		Canada Western Flaxseed.....	—	815.1
		U.S.A. Flaxseed.....	—	938.0
		U.S.A. Corn.....	—	751.3
Mar. 28- Apr. 4	PRESCOTT National Harbours Board.....	Canada Western Wheat.....	—	7,329.7
		Canada Western Oats.....	1,333.0	—
		Canada Western Barley.....	1,114.0	—
		Canada Western Flaxseed.....	—	82.6
		Canada Western Screenings.....	—	*6,560
		U.S.A. Corn.....	—	1,827.4
Mar. 2-24	QUEBEC National Harbours Board.....	Canada Western Wheat.....	—	7,343.8
		Canada Western Oats.....	—	4,530.6
		Canada Western Barley.....	—	4,710.1
		Canada Western Rye.....	—	3.8
		Canada Western Rapeseed.....	—	*930
		Canada Western Screenings.....	—	*5,380
		U.S.A. Wheat.....	—	7.7
		U.S.A. Oats.....	—	42.7
		U.S.A. Barley.....	—	95.7
		U.S.A. Flaxseed.....	—	13.6
		U.S.A. Mixed Grain.....	—	*2,480
		S.A. Corn.....	—	31.2
Feb. 22- Mar. 4	SOREL North American Elevators Ltd.....	Canada Western Wheat.....	—	12,458.6
		Canada Western Oats.....	—	265.6
		Canada Western Barley.....	—	584.2
		U.S.A. Corn.....	—	278.3
Mar. 8-24	TORONTO Toronto Elevators.....	Canada Western Wheat.....	—	2,846.7
		Canada Western Oats.....	—	985.2
		Canada Western Barley.....	—	1,333.1
		Canada Western Rye.....	—	42.5
		Canada Western Flaxseed.....	—	1,024.7
		Canada Western Screenings.....	—	*3,250
		U.S.A. Corn.....	—	2,672.9
		U.S.A. Soybeans.....	—	13,981.3
June 24	PETERBOROUGH Trent Elevator Co.....	Canada Western Wheat.....	—	245.3
Apr. 1-11	WALKERVILLE Hiram Walker & Sons Grain Corp. Ltd.....	Canada Western Wheat.....	—	2,402.9
		Canada Western Oats.....	—	24.1
		Canada Western Barley.....	—	458.7
		Canada Western Rye.....	—	697.5
		U.S.A. Corn.....	—	488.3

* Pounds.

Table C-15.—Amounts Collected and Grain Purchased under the One Per Cent Levy, Prairie Farm Assistance Act, Crop Year 1959-60

Province	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed	Total
	\$	\$	\$	\$	\$	\$	\$
Manitoba.....	655,386.75	45,860.73	149,945.64	10,032.39	98,426.02	1,844.96	961,496.49
Saskatchewan.....	3,101,317.13	50,579.36	289,156.97	19,684.66	182,668.66	28,155.18	3,671,561.96
*Alberta.....	1,145,113.50	46,579.06	323,913.11	8,611.27	162,301.15	7,347.44	1,693,865.53
Totals.....	4,901,817.38	143,019.15	763,015.72	38,328.12	443,395.83	37,347.58	6,326,923.98
*Includes Peace River area in B.C.							
Penalties on late filing of returns							2.42
Total collections Aug. 1, 1959 to July 31, 1960							6,326,926.40

	GRAIN PURCHASES						
	thousands of bushels						
Manitoba.....	48,842	7,339	17,822	1,107	3,238	114	78,462
Saskatchewan.....	238,732	8,390	36,009	2,264	5,855	1,471	292,721
Alberta.....	92,889	9,044	42,195	980	5,183	367	150,658
Totals.....	380,463	24,773	96,026	4,351	14,276	1,952	521,841

Table C-16—Licences in Force and Storage Capacity as at July 31st, 1960, and a Year Ago

Kind of Licence	Licences in force July 31		Licensed storage capacity July 31	
	1960	1959	1960	1959
Country Elevators.....	5,302	5,317	361,915,800	378,071,540
Supplementary Annexes to Country Elevators.....	*	*	7,170,500	11,381,400
Terminals and Mill Elevators.....	79	80	159,533,010	158,266,010
Eastern Elevators.....	32	31	110,435,300	94,227,300
Track Buyers, Commission Merchants and Grain Dealers.....	45	49	†	†
Totals.....	5,458	5,477	639,054,610	641,946,250

* 147 buildings at July 31, 1960 and 204 buildings at July 31, 1959.

† These licences do not cover grain storage facilities.

Table C-17.—Number and Kind of Licences Issued and Licensed Storage Capacity, as at December 1st each year for the Past Five Years

Kind of Licence	1960	1959	1958	1957	1956
NUMBER OF LICENCES					
Public Country Elevator.....	5,293	5,304	5,314	5,343	5,354
Private Country Elevator.....	6	8	8	10	9
Mill Elevator.....	27	34	35	33	32
Public Terminal Elevator.....	—	—	—	—	5
Semi-Public Terminal Elevator.....	40	40	40	40	34
Private Terminal Elevator.....	5	5	5	5	5
Eastern Elevator.....	32	31	31	30	30
Track Buyer.....	18	20	22	21	21
Commission Merchant.....	21	22	24	23	23
Grain Dealer.....	6	5	5	5	5
Totals.....	5,448	5,469	5,484	5,510	5,518
LICENCED CAPACITY					
	thousands of bushels				
Public Country Elevator.....	366,636	380,838	373,357	364,661	356,263
Grain Storage Buildings.....	7,241	10,157	12,992	14,953	15,080
Private Country Elevator.....	156	232	240	369	337
Mill Elevator.....	12,794	13,637	13,671	13,513	13,451
Public Terminal Elevator.....	—	—	—	—	17,100
Semi-Public Terminal Elevator.....	139,974	138,524	137,524	137,524	118,774
Private Terminal Elevator.....	7,720	7,070	7,070	7,070	7,070
Eastern Elevator.....	110,435	97,767	94,227	94,102	94,102
Totals.....	644,956	648,225	639,081	632,192	622,177

Table C-18.—Licensed Elevators and Storage as at December 1, 1960

Kind of Elevator	Ontario	Mani- toba	Saskat- chewan	Alberta	British Colum- bia	Quebec and Mari- times	Totals
NUMBER OF ELEVATORS							
Public Country.....	3	692	2,897	1,682	19	—	5,293
Private Country.....	—	2	1	3	—	—	6
Mill.....	3	8	6	9	1	—	27
Public Terminal.....	—	—	—	—	—	—	—
Semi-Public Terminal.....	24	2	2	3	9	—	40
Private Terminal.....	2	2	—	1	—	—	5
Eastern.....	19	—	—	—	—	13	32
Totals.....	51	706	2,906	1,698	29	13	5,403
STORAGE CAPACITY							
	thousands of bushels						
Public Country.....	1,660	48,818	190,293	123,764	2,101	—	366,636
†Grain Storage Buildings.....	—	—	4,464	2,777	—	—	7,241
Private Country.....	—	45	29	82	—	—	156
Mill.....	1,480	2,255	4,992	4,049	18	—	12,794
Public Terminal.....	—	—	—	—	—	—	—
Semi-Public Terminal.....	91,967	6,000	11,000	6,100	24,907	—	139,974
Private Terminal.....	2,435	3,795	—	1,490	—	—	7,720
Eastern.....	58,026	—	—	—	—	52,409	110,435
Totals.....	155,568	60,913	210,778	138,262	27,026	52,409	644,956

†Off-site storage.

Table C-19.—Warehouse Receipt Registrations for Primary and Transfer Receipts and Shipments at Semi-Public Terminal Elevators and Eastern Elevators, by Area and Grain, Crop Year 1959-60 and 10-Year Average.

Area	Grain	Crop Year 1959-60		10-Year Average, 1949-50 to 1958-59	
		Registered	Registered for Cancellation	Registered	Registered for Cancellation
		thousands of bushels			
Western Division— Winnipeg, including Lakehead and Churchill	Wheat	226,100	212,360	207,695	202,874
	Oats	26,344	31,526	66,070	67,775
	Barley	51,850	56,693	74,686	73,927
	Flax	8,065	7,568	8,956	9,388
	Rye	3,918	4,133	9,530	9,709
	Mixed Grain	158	272	726	506
	Corn	—	—	26	27
	Other Grains	31	81	151	159
Interior Elevators— Calgary, Edmonton, Lethbridge, Moose Jaw and Saskatoon	Wheat	4,252	5,284	5,760	4,459
	Oats	265	289	341	348
	Barley	2,066	2,149	1,563	1,561
	Flax	78	77	183	185
	Rye	7	7	39	40
	Mixed Grain	4	9	2	27
	Corn	4	7	15	13
	Other Grains	1,663	1,623	1,417	1,242
Vancouver and Prince Rupert Area—	Wheat	95,504	96,145	99,018	98,564
	Oats	2,711	3,475	2,415	3,392
	Barley	32,775	32,155	18,333	18,160
	Flax	6,421	6,744	1,840	1,791
	Rye	370	329	219	221
	Mixed Grain	4	2	36	47
	Corn	—	—	268	268
	Other Grains	3,447	3,531	1,615	1,602
Western Division— All Points	Wheat	325,856	313,789	312,473	305,897
	Oats	29,320	35,290	68,826	71,515
	Barley	86,691	90,997	94,582	93,648
	Flax	14,564	14,389	10,979	11,364
	Rye	4,295	4,469	9,788	9,970
	Mixed Grain	166	283	764	580
	Corn	4	7	309	308
	Other Grains	5,141	5,235	3,183	3,003
Totals—All Grains		466,037	464,459	500,904	496,285
Eastern Division—	Wheat	277,885	258,856	306,572	302,837
	Oats	32,845	33,814	44,044	44,034
	Barley	37,452	38,477	81,982	81,686
	Flax	8,225	8,615	18,767	19,110
	Rye	1,958	2,031	6,542	6,698
	Mixed Grain	512	455	548	535
	Corn	22,663	21,979	19,258	19,314
	Screenings	1,730	1,711	1,488	1,501
	Peas	113	109	119	119
	Soybeans	11,601	10,999	3,895	3,842
	Buckwheat	85	82	362	364
	Other Grains	41	41	465	464
Totals—All Grains		395,110	377,169	484,042	480,504

APPENDIX D

Inspection Branch

M. J. CONACHER, *Chief Grain Inspector*

Under Section 32 of the Canada Grain Act, the Grain Inspection Branch in the Western Division establishes grades on carlots of grain on samples drawn during unloading by officials of the Inspection Branch at the Lakehead, Pacific Coast, Churchill, Winnipeg, Calgary, Edmonton, Moose Jaw, Saskatoon, Lethbridge and Medicine Hat. Also, all grain shipped from terminal and mill elevators is officially sampled and inspected. At the primary inspection points of Winnipeg, Calgary and Edmonton, samples placed in railway cars by country elevator agents are removed and graded; while this service does not provide official grades of these shipments, the grades established on the unofficial samples are used by the shippers and terminal operators as a guide to their delivery and handling of the grain.

In the Eastern Division, sampling and grading service is provided on request at Chatham and Toronto for eastern grown grain. At Montreal, Quebec, Sorel, Three Rivers, Baie Comeau, St. John and Halifax, grain loaded into vessels for export is sampled and reviewed with respect to grade.

Grades of all grain in store in all terminal and eastern elevators weighed over during the crop year are verified by officials of the Inspection Branch.

Crop Conditions and Grades, 1959, Western Division

Western Canada had great extremes in weather in 1959. In the spring, soil moisture varied from extremely low in the central and southern parts of the Prairies, to adequate in the northern and western areas, and excessive in eastern Manitoba. The dry area continued dry and hot through summer, so much of the crop was light. Outside of the dry belt, to the west, north and east, many crops were damaged by frosts and by rain at harvest time; large areas of crops were left in the fields under snow, to be threshed after freeze-up or in the spring.

The proportion of high grades of grain shipped was remarkable, considering the bad weather that the crops endured; although there is no doubt that much of the lower grade grain was used on the farms as feed, including grain that was possibly damaged in drying on the farms. The farmers generally were obviously impressed by publicity given to the risk of loss of precious markets if grain that was damaged in drying should be sold to overseas millers or maltsters, represented as Canadian "quality" grain.

Manitoba No. 3 Northern was the predominating grade (31.7%) of red spring wheat shipments through the 1959-60 crop year. Shipments of Manitoba No. 2 Northern were down from the previous year (27.9% against 33.5%), as was Manitoba No. 1 Northern (1.4% against 1.9% in the 1958-59 crop year); but only 16.0% of shipments graded Manitoba No. 4 Northern, No. 5 and No. 6. The figures given here do not include Tough and Damp red spring wheat (20.3% of all carlot shipments), practically all of which was promoted to straight grade after drying in terminal elevators.

In considering the percentages of different grades shipped, it must be remembered that these contain varying proportions of grain carried over from the previous crop year. Farmers are naturally disposed to sell their higher grade, thus higher priced, grain and use the lower priced grain for feed; how-

ever, it is significant that the supply of low grade wheat virtually disappeared through the summer of 1960.

The pattern of grades of durum wheat shipped in the 1959-60 crop year was even better than that of red spring wheat. Less than 12 percent of shipments were graded No. 4, No. 5 and No. 6 Canada Western Amber Durum. This could be attributed to the fact that little durum wheat is grown in the northern areas where the weather was so bad in the fall of 1959. The same applied to rye, which was generally of high grade; 65.2% of shipments of this grain were graded No. 1 or No. 2 Canada Western.

Only 14.7% of oats shipped during the crop year were "straight" grade (dry) No. 3 Canada Western and higher. Damage from mildew, the result of weathering, was more conspicuous in oats than for several years.

41.3% of the barley shipped in cars from the country were graded No. 3 Canada Western or higher (including six-row and two-row), but much of this was not accepted by domestic maltsters or exporters to the malting trade, on account of thin, ripe kernels from the dry areas, and because mechanical handling increased the percentages of peeled kernels—the cause was loose hulls from weathering of the ripe crops in the wetter areas. Much of this barley was subsequently demoted to "feed" grades in the terminal elevators because it could not be delivered in conformity with requirements of the malting trade.

Flaxseed showed the effect of weathering in the fall. Only 66.8% was graded No.1 Canada Western, compared to 89.0% in the 1958-59 crop year. Much of the rapeseed shipped was high in moisture content, and was dried in terminal elevators. Both rapeseed and flaxseed that was caught in the fields under snow meant substantial losses to the growers; they took serious losses in grade, and in many cases these grains were not worth threshing in the spring.

Mustard seed produced in the Lethbridge district, was about 90% No. 1 Canada Western, with Oriental variety predominating.

Crop Conditions and Grades, 1959, Eastern Division

In Eastern Canada, the winter of 1958-59 was particularly hard on crops of winter varieties of wheat and barley. Winter-killing of these grains was so severe in southwestern Ontario that much of the acreage was resown in the spring. The losses of winter barley were offset by planting of spring barley, but wheat production was sharply reduced.

The summer of 1959 was abnormally dry in Ontario and Quebec, so the early-maturing grains, namely wheat, barley, rye, oats and flaxseed were of generally high quality. 59% of carlots of wheat inspected were graded No. 1 or No. 2 Canada Eastern Winter, and 89% of carlots of barley were graded No. 2 or No. 3 Canada Eastern Six-Row.

The late-maturing crops, corn, soybeans and pea beans were helped by timely rains in early September, and subsequent fine harvest weather produced good average quality in these crops. Frost in some areas was as early as September 14 and did limited damage to late crops of soybeans; 81% of soybeans inspected were graded No. 1 or No. 2 Canada Yellow, including 26% tough and damp.

77% of pea beans were graded No.1 and Extra No. 1 Canada Eastern; the colour was very good and incidence of damage from disease was low.

55% of cars of corn inspected qualified for straight grades (dry or extra dry) No. 1 and No. 2 Canada Eastern; 44% of all cars inspected were off-grade on account of excessive moisture content.

Control of Drying of Grain

The great volume of 1959 crop grain that was threshed with high moisture content taxed drying facilities to the utmost. Dryers at terminal elevators worked at full capacity through the winter and spring; over 53 million bushels were dried in the terminals under strict supervision of the Grain Inspection Branch. The Board's Research Laboratory gave excellent collaboration in the testing of samples to determine effects of drying on the quality of the grain.

Dryers were also set up in some farming areas, to cope with the problem of storing and shipping damp grain. An assiduous, extensive operation, conducted jointly by the Research Laboratory and the Inspection Branch, resulted in such control of drying that damage to grain was held to an almost negligible level.

The small amount of grain shipped that was damaged in drying was graded Rejected Dried.

Samples Submitted For Grading

18,628 samples submitted by country elevator operators and farmers, "subject to inspector's grade and dockage", were graded during the 1959-60 crop year, compared to 13,627 during the previous crop year.

Farmers' Complaints on Carlot Shipments

During the crop year 1959-60, the Inspection Branch received 51 requests from farmers to establish whether the identity of carlots of special bin grain had been preserved in the handling through country elevators. In 13 instances it was established that the identity of the farmers' grain had not been preserved. Appropriate settlements were made by the elevator operators in these cases.

Extension of Grain Inspection Services

The construction of the 12-million bushel elevator at Baie Comeau on the Lower St. Lawrence River, required the establishment of official grain inspection service there in order to provide final certificates of grade on outward vessel shipments. The Board provided staff for the inspection of Canadian grain, and the United States Department of Agriculture provided staff for the grading of U.S. grain. The U.S. Department of Agriculture also opened an office in Montreal to handle the grading of their grain at the elevators in the Upper St. Lawrence district.

Kernel Characteristics of Varieties

The Inspection Branch provides a special service to plant breeders in the Department of Agriculture by examining and reporting on the kernel characteristics of new varieties and hybrids of red spring, amber durum and winter wheat and barley.

The report points out the desirable and undesirable kernel characteristics of each variety and describes the appearance of the sample in comparison with the normal appearance of high quality Canadian red spring wheat.

Preliminary reports are made directly to plant breeders on new varieties in their earliest stages of development. This gives the plant breeder invaluable guidance in deciding which varieties he should continue to develop. In the final stages of development, a detailed report is made to the plant breeders and the Associate Committee on Grain Research. This report is of value when the variety is considered for licensing.

In 1960, almost 2,000 samples, representing 135 new varieties and selected lines of established varieties, were examined and reported on.

The constant production of new varieties has made it necessary to institute a more intensive program of staff training in varietal identification for our inspectors. This has been done in conjunction with an expanded staff training program for Grain Inspectors and Grain Inspection Assistants, which was inaugurated throughout the system this year.

In connection with this work, the Inspection Branch prepared for publication an illustrated handbook entitled "Identification of Barley and Wheat Varieties by Kernel Characters", especially for the use of Grain Inspectors and grain handlers. This publication has been well received by the grain trade and agricultural institutions in Canada, the United States of America, and overseas.

Changes in Malting Grades of Barley

In response to a request made in the meeting of the Committee on Western Grain Standards in October, 1959, the Board investigated problems regarding grades of barley. In meetings with representatives of all interests in the malting barley business, from farmers to exporters, it was established that much barley being admitted to "malting" grades was being demoted to "feed" grades for two reasons, (1) due to unavoidable increase in peeled and broken kernels in handling at terminal elevators, barley received containing within one percent of the maximum tolerances in the malting grades would usually not qualify for the same grades on delivery from the terminals, and (2) much barley being admitted into top grades was not acceptable by domestic or foreign maltsters on account of small kernel size. Therefore, in the interests of the growers of barley of true "malting" quality, kernel size specifications were introduced, and tolerances of peeled and broken kernels were reduced in the grades of No. 2 and No. 3 Canada Western barley. Also, the commercial grade of No. 4 Canada Western Six-Row barley was rescinded because it had proved useless. These changes were made effective on August 1, 1960.

Collaboration with U.S.A. Grain Inspection Service

The increased handling of United States grain through Canadian elevators resulting from the St. Lawrence Seaway development, led to their Department of Agriculture establishing grain inspection offices at Montreal and Baie Comeau to provide official United States inspection of their grain.

Negotiations with officials of the United States grain inspection service were completed by the Board's Chief Grain Inspector on the occasion of his attendance at a biennial conference of senior officials of the United States service in Toledo, Ohio, May, 1960. A practical, satisfactory program was set up, including arrangements for the Board to provide sampling service for the United States inspectors at the elevators in the St. Lawrence.

Improvements in Equipment

During the year the Inspection Branch participated in the testing of experimental apparatus for sampling of grain by mechanical means in various types of elevator installations. This was done in conjunction with the regular program of control of sampling, particularly in terminal and Eastern elevators. This work resulted in some new installations of mechanical samplers in terminals, and the prospect of several more units being installed.

Increasingly exacting specifications require more and better equipment for grading. For example, when the assessment of dockage on export shipments of oil seeds was changed from the nearest one-half of a percent to the nearest one-tenth percent, this dictated the need for faster, more precise scales, cleaning machines and sieves; similarly, new precision equipment became necessary with the introduction of requirement as to size of kernels in the top grades of barley.

Improvements in accuracy and speed of testing grain for moisture were introduced with the technical assistance of the Board's Research Laboratory. An electrical meter supplanted the older distillation method for the testing of some kinds of grain.

The program for acquisition of better equipment, while short of known requirements, made significant progress during the year.

Staff Training

The rate of introduction of new kinds and varieties of grain in Canada in recent years and a new method of recruiting prospective grain inspectors, have required a real expansion of the training program for grain inspectors and grain inspection assistants. This phase of staff training has become an increasingly significant function of the Inspection Branch head office. A senior inspector of the Chief Inspector's staff handles this important project. In the winter of 1959-60 this officer made a trip to offices through the system to give personal instruction and guidance to staff. In addition, he directed a program of staff training that is conducted through the year by senior grain inspectors at all points.

Visitors to the Inspection Branch

During the 1959-60 crop year, 81 people from foreign countries visited in the head offices of the Board's Inspection Branch, and many of these also visited terminal points where they were shown how the inspection services function. The visitors included officials of foreign governments, men in private grain trade, and members of the Canadian Foreign Trade Service.

These visits are invaluable to trade relations; the effectiveness of the Canadian inspection system obviously makes a good impression on these people who play important roles in the marketing of our grain.

Western Division

Table D-1.—Carlot Inspections by Points, Crop Year 1959-60, compared with 1958-59

	1959-60	1958-59	1959-60	1958-59
			percent of total	
Fort William.....	155,380	144,666	57.1	53.8
Winnipeg.....	10,583	11,231	3.9	4.2
Churchill.....	12,109	10,712	4.5	4.0
Moose Jaw.....	2,879	3,547	1.1	1.3
Saskatoon.....	7,648	8,337	2.8	3.1
Calgary.....	5,472	4,864	2.0	1.8
Edmonton.....	1,782	3,108	0.7	1.2
Medicine Hat.....	2,577	1,981	0.9	0.7
Lethbridge.....	402	281	0.1	0.1
Prince Rupert.....	4,416	3,863	1.6	1.4
Vancouver.....	68,690	76,244	25.3	28.4
Totals.....	271,938	268,834	100.0	100.0

Table D-2.—Carlot Inspections, Crop Year 1959-60

Grade	Carlots	Percentage	Percentage of Total Wheat Inspected
WHEAT			
1 Manitoba Northern.....	2,491	1.4	—
2 Manitoba Northern.....	51,010	27.9	—
3 Manitoba Northern.....	57,888	31.7	—
4 Manitoba Northern.....	21,414	11.7	—
No. 4 Special.....	314	0.2	—
No. 5.....	7,378	4.0	—
No. 6.....	517	0.3	—
Feed.....	9	*	—
Garnet.....	125	0.1	—
Tough.....	25,038	13.7	—
Damp.....	12,136	6.6	—
Smutty.....	107	0.1	—
Rejected.....	4,248	2.3	—
Others Red Spring.....	90	*	—
Total Red Spring Wheat.....	182,765	100.0	92.5
1 Canada Western Amber Durum.....	15	0.1	—
2 Canada Western Amber Durum.....	4,383	31.5	—
3 Canada Western Amber Durum.....	4,683	33.7	—
Extra 4 Canada Western Amber Durum.....	2,628	18.9	—
4 Canada Western Amber Durum.....	1,553	11.2	—
5 Canada Western Amber Durum.....	74	0.5	—
6 Canada Western Amber Durum.....	3	*	—
Tough Durum.....	173	1.2	—
Others Durum.....	401	2.9	—
Total Amber Durum Wheat.....	13,913	100.0	7.1
Total Soft White Spring Wheat.....	171	—	0.1
Total Mixed Wheat.....	79	—	*
Total Alberta Winter Wheat.....	652	—	0.3
Total All Wheats.....	197,580	—	100.0

Table D-2.—Carlot Inspections, Crop Year 1959-60—Continued

Grade	Carlots	Percentage
OATS		
2 Canada Western.....	32	0.3
Extra 3 Canada Western.....	214	1.7
3 Canada Western.....	1,586	12.7
Extra 1 Feed.....	1,539	12.3
1 Feed.....	7,657	61.4
2 Feed.....	287	2.3
3 Feed.....	50	0.4
Mixed Feed.....	146	1.2
Tough.....	619	5.0
Damp.....	180	1.4
Rejected.....	73	0.6
Others.....	94	0.7
Total Oats.....	12,477	100.0
BARLEY		
1 Canada Western Six Row.....	18	*
2 Canada Western Six Row.....	2,006	4.3
3 Canada Western Six Row.....	13,504	28.8
4 Canada Western Six Row.....	3,872	8.3
1 Canada Western Two Row.....	26	0.1
2 Canada Western Two Row.....	660	1.4
3 Canada Western Two Row.....	3,134	6.7
1 Feed.....	13,565	29.0
2 Feed.....	3,489	7.4
3 Feed.....	350	0.7
Tough.....	4,590	9.8
Damp.....	1,132	2.4
Rejected.....	432	0.9
Others.....	74	0.2
Total Barley.....	46,852	100.0
RYE		
1 Canada Western.....	10	0.4
2 Canada Western.....	1,538	64.8
3 Canada Western.....	592	24.9
4 Canada Western.....	94	4.0
Ergoty.....	22	0.9
Tough.....	98	4.1
Damp.....	11	0.5
Rejected.....	8	0.3
Others.....	2	0.1
Total Rye.....	2,375	100.0
FLAXSEED		
1 Canada Western.....	6,014	66.8
2 Canada Western.....	443	4.9
3 Canada Western.....	174	1.9
4 Canada Western.....	50	0.5
Tough.....	1,393	15.5
Damp.....	731	8.1
Rejected.....	9	0.1
Others.....	195	2.2
Total Flaxseed.....	9,009	100.0

Table D-2.—Carlots Inspections, Crop Year 1959-60—Continued

Grade	Carlots	Percentage
Corn.....	94	—
Mixed Grain.....	124	—
Screenings.....	309	—
Buckwheat.....	13	—
Peas.....	112	—
Rapeseed.....	2,453	—
Sample Grain.....	48	—
Safflower Seed.....	96	—
Mustard Seed.....	343	—
Sorghum (U.S.A. Origin).....	35	—
Condemned Grain.....	18	—
Grand Total	271,938	—

* Less than 0.5%.

Table D-3.—Carlots of Tough, Damp and Straight Grain Inspected, Crop Year 1959-60

Grain	Tough	Damp	Tough and Damp	Straight	Total
Wheat.....	25,211	12,136	37,347	160,233	197,580
Oats.....	619	180	799	11,678	12,477
Barley.....	4,590	1,132	5,722	41,130	46,852
Rye.....	98	11	109	2,266	2,375
Flaxseed.....	1,393	731	2,124	6,885	9,009
Totals	31,911	14,190	46,101	222,192	268,293
Others.....	—	—	—	—	3,645*
All Grains	—	—	—	—	271,938
PERCENTAGE OF TOTAL					
	%	%	%	%	%
Wheat.....	12.8	6.1	18.9	81.1	100.0
Oats.....	5.0	1.4	6.4	93.6	100.0
Barley.....	9.8	2.4	12.2	87.8	100.0
Rye.....	4.1	0.5	4.6	95.4	100.0
Flaxseed.....	15.5	8.1	23.6	76.4	100.0
Principal Grains	11.9	5.3	17.2	82.8	100.0
Others.....	—	—	—	—	100.0*

* Details not available.

Table D-4.—Number of Two-Pound Samples "Subject to Grade and Dockage" Inspected, Crop Year 1959-60 compared with Crop Year 1958-59

Point	1959-60	1958-59
Number of Samples		
Winnipeg.....	11,828	9,981
Calgary.....	2,526	1,258
Edmonton.....	2,518	1,275
Moose Jaw.....	51	126
Saskatoon.....	467	512
Lethbridge.....	1,238	465
Medicine Hat.....	—	10
Totals	18,628	13,627

Table D-5.—Carlots Re-Inspected, Crop Year 1959-60

Point	In-spected	Re-In-spected	Un-changed	Grades Raised	Grades Lowered	Dockage Raised	Dockage Lowered
Fort William.....	155,380	10,477	9,587	718	121	8	43
Winnipeg.....	10,583	784	608	126	48	1	1
Churchill.....	12,109	—	—	—	—	—	—
Moose Jaw.....	2,879	219	193	25	1	—	—
Saskatoon.....	7,648	258	203	50	5	—	—
Calgary.....	5,472	311	271	37	1	—	2
Edmonton.....	1,782	82	70	10	2	—	—
Medicine Hat.....	2,577	189	127	43	18	—	1
Lethbridge.....	402	—	—	—	—	—	—
Prince Rupert.....	4,416	—	—	—	—	—	—
Vancouver.....	68,690	4,995	4,250	706	24	2	13
Totals.....	271,938	17,315	15,309	1,715	220	11	60
Percentage of Re-Inspections							
	%	%	%	%	%	%	%
Fort William.....	—	100.0	91.5	6.8	1.2	0.1	0.4
Winnipeg.....	—	100.0	77.6	16.1	6.1	0.1	0.1
Churchill.....	—	100.0	—	—	—	—	—
Moose Jaw.....	—	100.0	88.1	11.4	0.5	—	—
Saskatoon.....	—	100.0	78.7	19.4	1.9	—	—
Calgary.....	—	100.0	87.1	11.9	0.3	—	0.7
Edmonton.....	—	100.0	85.4	12.2	2.4	—	—
Medicine Hat.....	—	100.0	67.2	22.8	9.5	—	0.5
Lethbridge.....	—	100.0	—	—	—	—	—
Prince Rupert.....	—	100.0	—	—	—	—	—
Vancouver.....	—	100.0	85.1	14.1	0.5	*	0.3
Totals.....	—	100.0	88.4	9.9	1.3	0.1	0.3

* Less than 0.05%.

Table D-6.—Summary of Carlot Inspections Appealed, Crop Year 1959-60

Item	Winnipeg		Edmonton		Calgary		Total	
	Cars	Percent	Cars	Percent	Cars	Percent	Cars	Percent
Left as Graded.....	346	90.6	377	91.3	771	83.2	1,494	86.8
Grades Raised.....	28	7.3	32	7.7	146	15.8	206	12.0
Grades Lowered.....	8	2.1	4	1.0	9	1.0	21	1.2
Totals.....	382	100.0	413	100.0	926	100.0	1,721	100.0
Total Cars Inspected.....							271,938	100.0
Total Appeals.....							1,721	0.6
Total Grades Changed.....							227	0.03

Table D-7.—Vessel Shipments Inspected, Crop Year 1959-60

Grain	Fort William and Port Arthur	Vancouver	Victoria	Prince Rupert	Churchill	Total
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat.....	188,059,889	92,272,420	2,821,795	—	22,111,400	305,265,504
Oats.....	29,193,409	2,719,179	14,889	—	37,600	31,965,077
Barley.....	58,477,765	22,941,616	—	8,895,404	—	90,314,785
Rye.....	4,033,693	312,134	—	—	—	4,345,827
Flaxseed.....	6,963,683	6,377,505	445,169	—	—	13,786,357
Buckwheat.....	23,544	—	—	—	—	23,544
*Sample Grain.....	361,617	—	—	—	—	361,617
*Screenings.....	2,940,751	33,352	—	—	114,861	3,088,964
*Canada Rapeseed....	—	2,895,865	—	—	—	2,895,865
*Mustard Seed.....	—	496,836	—	—	—	496,836
*Mustard Seed (U.S.A. origin).....	—	11,105	—	—	—	11,105
**Safflower Seed.....	—	75,875	—	—	—	75,875
**Safflower Seed (U.S.A. origin).....	—	23,133	—	—	—	23,133
Totals.....	290,054,351	128,159,020	3,281,853	8,895,404	22,263,861	452,654,489

* In bushels of 50 lbs.

** In bushels of 45 lbs.

Table D-8.—Carlot Shipments ex Terminal Elevators Inspected, Crop Year 1959-60

Grain	Winnipeg	Fort William and Port Arthur	Calgary	Edmonton	Moose Jaw
Wheat.....	95	1,413	780	1,302	88
Oats.....	255	990	16	144	67
Barley.....	261	704	1,175	27	11
Flaxseed.....	11	355	3	29	10
Rye.....	2	50	—	2	2
Mixed Grain.....	18	—	1	—	—
Corn.....	7	—	—	—	—
Buckwheat.....	3	4	—	—	—
Peas.....	33	—	—	—	—
Screenings.....	431	2,615	188	143	88
Rapeseed.....	—	36	77	243	1
Sample Feed Grain.....	10	—	36	—	16
Mustard Seed.....	—	—	—	—	—
Sample Grain.....	—	23	—	—	—
Oats Groats.....	—	2	—	—	—
Totals.....	1,126	6,192	2,276	1,890	283

Grain	Saskatoon	Lethbridge	Medicine Hat	Vancouver, Victoria and Prince Rupert	Churchill
Wheat.....	587	124	1	530	—
Oats.....	49	—	—	175	—
Barley.....	1	—	—	137	—
Flaxseed.....	22	15	46	7	—
Rye.....	—	1	—	9	—
Mixed Grain.....	2	—	—	6	—
Corn.....	—	—	—	—	—
Buckwheat.....	—	—	—	—	—
Peas.....	—	—	—	—	—
Screenings.....	470	2	—	1,144	47
Rapeseed.....	513	—	—	7	—
Sample Feed Grain.....	—	—	—	—	—
Mustard Seed.....	—	14	—	28	—
Totals.....	1,644	156	47	2,043	47

Eastern Division

Table D-9.—Carlot Inspections Eastern Grain, Crop Year 1959-60, by Grains and Points

Grain	Montreal	Toronto	Chatham	Total
Wheat.....	—	340	1,562	1,902
Oats.....	—	1	69	70
Barley.....	—	2	133	135
Rye.....	—	—	15	15
Buckwheat.....	6	—	4	10
Corn.....	—	1	1,573	1,574
Beans.....	—	—	174	174
Soybeans.....	—	71	1,478	1,549
Totals.....	6	415	5,008	5,429

Table D-10.—Carlot Inspections Eastern Grain, Crop Year 1959-60, by Grains, Grades and Points

Grades	Montreal	Toronto	Chatham	Total
WHEAT				
1 Canada Eastern White Winter.....	—	3	122	125
2 Canada Eastern White Winter.....	—	199	757	956
3 Canada Eastern White Winter.....	—	18	76	94
4 Canada Eastern White Winter.....	—	3	3	6
5 Canada Eastern White Winter.....	—	—	1	1
1 Canada Eastern Mixed Winter.....	—	—	30	30
2 Canada Eastern Mixed Winter.....	—	3	17	20
3 Canada Eastern Mixed Winter.....	—	—	1	1
Tough.....	—	55	455	510
Smutty.....	—	8	1	9
Weevilly.....	—	46	85	131
Damp.....	—	—	2	2
Sample.....	—	5	12	17
Totals.....	—	340	1,562	1,902
OATS				
3 Canada Eastern.....	—	—	23	23
4 Canada Eastern.....	—	1	37	38
5 Canada Eastern.....	—	—	1	1
Tough.....	—	—	6	6
Sample.....	—	—	1	1
Condemned.....	—	—	1	1
Totals, Oats.....	—	1	69	70
BARLEY				
2 Canada Eastern Six Row.....	—	—	6	6
3 Canada Eastern Six Row.....	—	—	114½	114½
4 Canada Eastern.....	—	2	7½	9½
5 Canada Eastern.....	—	—	1	1
Tough.....	—	—	3	3
Sample.....	—	—	1	1
Totals, Barley.....	—	2	133	135

Table D-10.—Carlot Inspections Eastern Grain, Crop Year 1959-60, by Grains, Grades and Points—Concluded

Grade	Montreal	Toronto	Chatham	Total
RYE				
2 Canada Eastern.....	—	—	7	7
Tough.....	—	—	8	8
Totals, Rye.....	—	—	15	15
BUCKWHEAT				
Tough.....	5	—	2	7
Damp.....	1	—	2	3
Totals, Buckwheat.....	6	—	4	10
CORN				
Extra Dry 1 Canada Eastern Yellow.....	—	—	99	99
1 Canada Eastern Yellow.....	—	—	460	460
Extra Dry 2 Canada Eastern Yellow.....	—	—	71	71
2 Canada Eastern Yellow.....	—	—	211	211
Extra Dry 3 Canada Eastern Yellow.....	—	—	11	11
3 Canada Eastern Yellow.....	—	—	22	22
Extra Dry 4 Canada Eastern Yellow.....	—	—	3	3
4 Canada Eastern Yellow.....	—	—	1	1
Extra Dry 5 Canada Eastern Yellow.....	—	—	1	1
5 Canada Eastern Yellow.....	—	—	1	1
Tough.....	—	—	168	168
Damp.....	—	1	400	401
Moist.....	—	—	123	123
Wet.....	—	—	1	1
Sample.....	—	—	1	1
Totals, Corn.....	—	1	1,573	1,574
BEANS				
Extra 1 Canada Eastern Pea.....	—	—	1	1
1 Canada Eastern Pea.....	—	—	131	131
2 Canada Eastern Pea.....	—	—	23	23
3 Canada Eastern Pea.....	—	—	9	9
4 Canada Eastern Pea.....	—	—	1	1
2 Canada Eastern Light Red Kidney.....	—	—	7	7
3 Canada Eastern Yellow Eye.....	—	—	1	1
4 Canada Eastern Yellow Eye.....	—	—	1	1
Totals, Beans.....	—	—	174	174
SOYBEANS				
1 Canada Yellow.....	—	—	312	312
2 Canada Yellow.....	—	42	505	547
3 Canada Yellow.....	—	2	61	63
4 Canada Yellow.....	—	—	12	12
5 Canada Yellow.....	—	—	1	1
Tough.....	—	22	450	472
Damp.....	—	5	106	111
Moist.....	—	—	26	26
Wet.....	—	—	4	4
Sample.....	—	—	1	1
Totals, Soybeans.....	—	71	1,478	1,549
Totals, All Grains.....	6	415	5,008	5,429

Table D-11.—Cargo Inspections, Eastern Grain, Crop Year 1959-60

Grain	St. John and Halifax	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.	bu.
Oats.....	—	38,285	—	—	38,285
Corn.....	—	—	—	633,311	633,311
Soybeans.....	—	18,666	226,700	2,586,067	2,831,433
Totals.....	—	56,951	226,700	3,219,378	3,503,029

Table D-11A.—Cargo Inspections, Western Grain, Crop Year 1959-60

Grain	St. John and Halifax	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.	bu.
Buckwheat.....	—	47,366	—	—	47,366
Flaxseed.....	559,870	360,237	—	—	920,107
Rapeseed.....	—	35,654	—	—	35,654
Peas.....	21,251	54,530	—	—	75,781
Totals.....	581,121	497,787	—	—	1,078,908

Table D-12.—Inspections, Eastern Grain in Bins, Trucks or Warehouses, Crop Year 1959-60

Grain	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.
Wheat.....	—	—	850	850
Oats.....	199,340	—	—	199,340
Buckwheat.....	62,399	—	—	62,399
Corn.....	—	—	500	500
Beans.....	—	1,000	393,758	394,758
Soybeans.....	—	—	99,826	99,826
Totals.....	261,739	1,000	494,934	757,673

Table D-12A.—Inspections, Western Grain in Bins, Trucks or Warehouses, Crop Year 1959-60

Grain	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.
Rapeseed.....	3,360	—	—	3,360
Mustard Seed.....	2,000	—	—	2,000
Totals.....	5,360	—	—	5,360

**Table D-13.—Inward and Export Cargoes Sampled and Grade Checked,
Crop Year 1959-60.**

	Montreal	Sorel	Three Rivers	Quebec	Halifax and St. John	Total
	bu.	bu.	bu.	bu.	bu.	bu.
EASTERN GRAIN						
Inward.....	2,665,714	—	—	—	—	2,665,714
Export.....	2,375,037	—	—	—	111,875	2,486,912
WESTERN GRAIN						
Inward.....	28,098,636	—	—	—	—	28,098,636
Export.....	56,224,786	16,959,684	11,127,948	8,503,928	24,555,277	117,371,623
Totals.....	89,364,173.	16,959,684	11,127,948	8,503,928	24,667,152	150,622,885

Table D-14.—Grain Sampled but not Inspected, Crop Year 1959-60

	Montreal	Toronto and Chatham	Sorel, Three Rivers and Quebec	Halifax and St. John	Total
EASTERN GRAIN					
Carlots.....	3	—	—	—	3
Inward Cargoes (bu.).....	—	—	—	—	—
Outward Cargoes (bu.).....	11,886	—	—	—	11,886
Bin Lots (bu.).....	27,048	—	—	—	27,048
WESTERN GRAIN					
Carlots.....	230	4	—	—	234
Inward Cargoes (bu.).....	142,726	—	216,575	—	359,301
Outward Cargoes (bu.).....	1,132,781	—	380,240	484,674	1,997,695
Bin Lots (bu.).....	327,230	9,948	677,708	—	1,014,886
U.S.A. GRAIN					
Carlots.....	248	—	—	—	248
Inward Cargoes (bu.).....	1,547,480	—	375,804	—	1,923,284
Outward Cargoes (bu.).....	10,120,503	—	348,602	—	10,469,105
Bin Lots (bu.).....	116,674	—	—	—	116,674
Totals—Cars.....	481	4	—	—	485
—Bushels.....	13,426,328	9,948	1,998,929	484,674	15,919,879

APPENDIX E

Grain Weighing Branch

J. J. MANSON, *Chief Grain Weighman*

Under the provisions of Sections 33 and 124 of the Canada Grain Act, all grain received into or shipped from licensed terminal elevators is weighed under supervision of the Board's weighing staffs. Weighing services are also provided at licensed mill elevators in the Western Division.

During the Crop Year 1959-60 services were provided at forty-five semi-public and private terminal elevators and when required, at twenty-nine mill elevators in the Western Division.

All scales and equipment for transferring grain to scales on receipt and from scales for shipment in all licensed terminal elevators and serviced mill elevators were regularly inspected during the crop year under provision of Section 92 of the Act.

In accordance with the special arrangement with the Standards Branch of the Department of Trade and Commerce, all scales in licensed terminal and eastern elevators were inspected, verified and stamped by the Board's Scale Inspector acting as an inspector under the Weights and Measures Act.

A semi-annual inspection was also made of all scales in terminal elevators to ascertain if scales were maintaining their accuracy. Special inspections were made when any doubt arose as to the accuracy of any scale.

Attention has been given to alterations in elevators and dust control installations to ensure that such changes or alterations do not affect the accuracy of the weighing of grain received at or shipped from these elevators.

The bringing into operation of the Deep Seaway has enabled deep sea vessels to proceed to the Lakehead to load grain cargoes. In this connection, several of the Lakehead elevators and particularly new constructions, are changing their systems of loading in an endeavour to better facilitate the loading of deep sea ships.

A new type of steel tank storage bin is being constructed at one of the Port Arthur elevators.

During the crop year under review, 273,201 carlots of grain were weighed on receipt at terminal and mill elevators in the Western Division, and of these carlots, 54,986 or 20.1% were reported leaking and 5,730 or 2.1% were reported without seals or had defective seals. There was also a total of 16,793 cars weighed out of terminals.

The Branch maintained a close checking of reported outturns at eastern elevators of cargoes loaded at Lakehead elevators and investigations were made in cases of reported excessive shortages with a view to assessing the liability where such could be established.

Under the provisions of Sections 139 and 140 of the Canada Grain Act, weighovers were conducted at twenty-five terminal elevators and twenty eastern elevators. Results of weighovers were submitted to the Board for comparison with records of outstanding warehouse receipts and preparation of official statements. The Board found it necessary to defer several terminal and eastern elevator audits due to heavy stocks of grain in store.

Table E-1.—Gross Quantities of all Grains Weighed at Terminal Elevators in the Western Division during 1959-60 Crop Year

Point	RECEIPTS							Miscellaneous
	Wheat	Oats	Barley	Rye	Flaxseed	Canadian Corn	Canadian Buckwheat	
	bu.	bu.	bu.	bu.	bu.	bu.	bu.	lb.
Fort William-Port Arthur	206,693,871	26,682,763	60,419,965	3,989,423	9,065,809	—	30,846	18,739,990
Vancouver-New Westminster	92,045,093	271	23,237,522	369,365	5,986,018	—	—	171,521,480
Victoria	3,042,524	2,681,554	207	283	422,474	—	—	—
Prince Rupert	—	—	9,535,127	—	—	—	—	—
Churehill	22,261,797	1,110	—	—	—	—	—	—
Calgary	1,609,020	—	1,991,447	—	5,468	—	—	8,888,880
Edmonton	2,006,200	46,031	47,288	—	5,239	4,259	—	15,943,590
Lethbridge	360,979	—	—	1,664	31,949	—	—	1,487,960
Moose Jaw	7,600	151,124	2,058	1,604	1,422	—	—	89,000
Saskatoon	259,820	45,207	—	—	35,511	—	—	59,532,490
North Transcona	114,118	23,356	26,805	4,096	1,407	—	—	751,020
Total Receipts	328,401,022	29,631,416	95,260,419	4,366,435	15,555,357	4,259	30,846	276,954,410
SHIPMENTS								
Fort William-Port Arthur	188,385,069	31,157,117	64,183,820	4,111,394	7,601,449	—	30,508	335,055,520
Vancouver-New Westminster	92,865,941	3,421,148	23,255,373	326,984	6,296,048	—	—	293,336,990
Victoria	2,859,621	17,966	2,802	—	444,082	—	—	5,168,780
Prince Rupert	—	—	8,896,325	—	—	—	—	4,877,790
Churehill	21,700,046	175,953	—	—	—	—	—	8,466,640
Calgary	1,544,207	6,476	2,071,606	—	5,468	—	—	9,951,380
Edmonton	2,289,059	63,521	39,816	—	4,174	7,085	—	17,332,000
Lethbridge	281,712	—	—	1,664	30,089	—	—	813,890
Moose Jaw	28,123	151,046	2,058	1,604	1,422	—	—	89,410
Saskatoon	1,061,183	11,059	—	—	34,838	—	—	61,034,500
North Transcona	80,934	56,561	35,434	4,096	1,467	—	—	677,440
Total Shipments	311,095,895	35,060,847	98,487,234	4,445,742	14,419,037	7,085	30,508	736,804,340

Table E-2.—Number of Cars Leaking and Cars with Missing Seals at the Lakehead, Other Points and at Winnipeg Yards, by Railways, for the Crop Year 1959-60

Destination	Cars Leaking		Missing Seals	
	C.N.R.	C.P.R.	C.N.R.	C.P.R.
Lakehead Elevators and Yards.....	20,317	17,835	2,047	1,485
Other Points.....	8,888	7,946	1,331	867
Totals.....	29,205	25,781	3,378	2,352
Totals—Both Railways.....	54,986		5,730	
Winnipeg Yards.....	920	764	591	614

Table E-3.—Number of Cars Weighed at all Points and Percentage of such Cars found Leaking or with Defective Seals, Crop Years 1958-59 and 1959-60

	Number		Percentage of Total	
	1959-60	1958-59	1959-60	1958-59
Cars Weighed In.....	273,201	273,651	100.0	100.0
Inward Cars Leaking.....	54,986	51,322	20.1	18.7
Inward Cars with Missing or Defective Seals..	5,730	5,755	2.1	2.1
Cars Weighed Out.....	16,793	21,125	—	—

Table E-4.—Average Reported Outturn Shortages on Vessel Shipments of Grain from Fort William-Port Arthur to Canadian and United States Ports during the 1959-60 Crop Year

Grain	Bushels Shipped	Shortage in Pounds per 1,000 bushels	
		1959-60	1958-59
CANADIAN PORTS			
Wheat.....	152,844,243	32.09	30.49
Durum Wheat.....	25,238,458	35.43	35.18
Oats.....	28,920,511	24.98	23.07
Barley.....	37,613,033	33.66	27.44
Rye.....	777,428	36.68	55.45
Flaxseed.....	5,195,746	40.35	33.65
Buckwheat.....	—	—	24.00
Sample Grain (in lbs.).....	19,166,210	.60 lbs. per 1,000 lbs.	.49 lbs. per 1,000 lbs.
Screenings (in tons).....	36,617	1.32 lbs. per ton	1.29 lbs. per ton
UNITED STATES PORTS			
Wheat.....	2,623,006	62.52	77.02
Oats.....	67,970	12.50	23.17
Barley.....	13,426,245	53.56	49.63
Rye.....	3,290,289	52.58	77.46
Screenings (in tons).....	34,590	—	—
TOTAL CANADIAN AND UNITED STATES PORTS			
Wheat.....	155,467,249	32.09	31.58
Durum Wheat.....	25,238,458	35.43	35.18
Oats.....	28,988,481	24.89	23.17
Barley.....	51,039,278	38.89	31.53
Rye.....	4,067,717	49.53	70.28
Flaxseed.....	5,195,746	40.35	33.65
Buckwheat.....	—	—	24.00
Sample Grain (in lbs.).....	19,166,210	.60 lbs. per 1,000 lbs.	.49 lbs. per 1,000 lbs.
Screenings (in tons).....	71,207	.71 lbs. per ton	.76 lbs. per ton

APPENDIX F

The Grain Research Laboratory

J. ANSEL ANDERSON, *Director*

Section 22 of the Canada Grain Act requires that "the Board shall maintain an efficient and adequately equipped laboratory for research work in relation to grain."

The following summary of the Laboratory's work for 1960 deals with the quality of Canadian grain marketed in the 1959-60 crop year, the quality of 1960 grain crops, and research and other activities. In accordance with previous practice, a separate annual report will be published by the Laboratory to put on record data on the quality of Canadian grain and progress made in research.

Quality of Grain Marketed in 1959-60

Throughout the crop year, the Laboratory continued to study the quality of spring wheat, durum wheat, barley, flax and other cereal grains at various stages of marketing. Detailed data obtained in these studies will be reported in the Laboratory's 1960 Annual Report.

Protein content of Canadian wheat has averaged about 14% for four successive years; accordingly, wheat from the carryover and wheat from the 1959 crop provided ample supplies of high quality grain throughout the 1959-60 crop year. Compared to the previous crop year, wheat marketed in 1959-60 was slightly higher in protein content and a little lower in bushel weight. Baking absorption and baking strength were high and supporting value was good. The relation between dough elasticity and extensibility was satisfactory. Wheat shipped from Pacific ports was more variable in quality than wheat shipped from Atlantic ports. Durum wheat marketed in 1959-60 was high in protein content but slightly lower in bushel weight than last year. Macaroni-making quality was excellent and rheological properties were somewhat better for the lower grades in this crop year. Malting barley was slightly lower in bushel weight, yield of plump barley, and yield of malt extract, than in 1958-59. Flax and rapeseed shipments were higher in average quality compared to those of the previous crop year.

Estimated Quality of 1960 Crops

Good moisture reserves and adequate spring rainfall got 1960 western grain crops away to an excellent start, but near-drought conditions that began in mid-July and continued throughout the remainder of the growing season reduced prospects of above-average yields. Most crops stood up surprisingly well to the drought, and harvesting was completed by mid-October under ideal weather conditions. Estimates of production for 1960 western crops are: wheat, 470 million bushels (including 16.3 million bushels of durum wheat); barley, 201 million bushels; flax 24.9 million bushels; and rapeseed, 551 million pounds. There was very little tough and damp grain, and crops were practically free of the various types of damage associated with adverse harvesting weather.

The Hard Red Spring wheat crop is high in grade, protein content, baking strength and supporting value. Compared to 1959-60 fourth quarter cargo shipments, bushel weight is lower this year, but the Northern grades mill very well and give high yields of flour of good color and satisfactory ash. Baking absorption and gassing power are both satisfactory, and doughs handle well during the baking process. Physical dough tests show a good balance between extensibility and elasticity. Average protein content at 14.2% is equal to the third highest on record. About 85% of the wheat will grade No. 2 and No. 3 Northern; there will be some No. 4 Northern but very little No. 1 Northern. The 1960 crop will ensure continued supplies of high-quality grain in commercial channels during the current crop year.

The Amber Durum wheat crop will be predominantly No. 2 and No. 3 C.W., about 10% will grade Extra No. 4 C.W. and there will be very small amounts of No. 1 and No. 4 C.W. The crop is high in protein, a little higher in bushel weight for the top grades than last year, but kernel weight is lower. The wheat is vitreous, mills well, and gives good yields of semolina. Yellow pigment is high and rheological properties and macaroni quality are excellent. As the new crop becomes blended with wheat in the carryover, protein content and macaroni color will be maintained and rheological properties will be improved, particularly in the lower grades.

The barley crop withstood the lack of moisture fairly well. Compared to last year, bushel weight is lower and nitrogen is higher which will result in a reduced yield of malt extract. Yield of plump barley will be high in the Six-row grades. A reduction in the tolerance for peeled and broken kernels and the introduction of a sieving test into the grading system on August 1, 1960, will contribute to a better class of barley for domestic use and for export.

The flax crop is of good average quality but the quality of the rapeseed crop was reduced by the drought conditions. Average results for the flax crop show that oil content is 41.4%, iodine value is 186 units, and protein content is 45.7%. Average results for the rapeseed crop are 41.3% oil and 43.2% protein.

Bulletins and Maps

Quality information for different grades of 1960 western grain crops was presented at the October meeting of the Committee on Western Grain Standards and later was published in maps and crop bulletins, i.e., two wheat protein maps (preliminary and final—5,200 copies); two bulletins on wheat (11,400 copies); one bulletin on barley (4,000 copies); and one bulletin on flax and rapeseed (1,000 copies). Distribution of these publications is made by mail and over the counter by the Laboratory, and also by the Canadian Wheat Board, the Grain Division, Department of Trade and Commerce, Ottawa, and Canadian Government Trade Commissioners. The Bulletin "Canadian Wheat 1959" was also distributed by Canadian representatives at the Netherlands Baking Foundation (NEBATO) Exhibition in Amsterdam last spring. Press releases preceded publication of all these reports.

Publication of the two quarterly bulletins (one on red spring wheat cargoes and one on durum wheat cargoes) was continued to the end of the 1959-60 crop year. Beginning with the first quarter of the 1960-61 crop year these two bulletins were published in English, French, German and Spanish instead of in English only. It is hoped that this important change will bring the bulletins to the attention of a greater number of readers in more countries. Distribution of quarterly bulletins will continue to be made by Canadian Government Trade Commissioners, who receive their supplies direct by air mail, and by the Laboratory.

Service to Grain Inspection Branch

During the year the Laboratory continued to work closely with the Grain Inspection Branch by providing such services as are required to aid in grading and associated problems. The more important work dealt with the quality tests on dried wheat, preliminary tests on samples that were used to make up Standard samples, and detailed quality studies on tentative Standard and Standard Export samples. Supervision of moisture-testing equipment in Inspection Offices continued as one of the Laboratory's main services to the Inspection Branch. Seventy-five CAE moisture meters have been installed in the various Inspection Offices. The meter has been calibrated for red spring wheat, barley, oats, flax and rapeseed, and it is now used almost exclusively for moisture tests on these grains. A regular check test system has been instituted, and results have shown that meters are being operated with a high degree of accuracy.

Other work for the Inspection Branch included: mercury detection in grain treated with mercurial fungicides, lipoxidase determinations on durum wheat, fatty acid tests on oil seeds, and a study of the relation between oil content of rapeseed and seed size.

Grain Drying 1959 Crop

The wet weather during the 1959 harvest was reminiscent of 1951 when nearly half the crop delivered was tough or damp. Over 53 million bushels of the 1959 crop were dried at Canadian terminal elevators, an estimated 5 million bushels of wheat were dried on farms, and about 56 million bushels of unthreshed wheat were left in the field under the snow all winter; most of this wheat however, was threshed in a dry condition in the spring of 1960.

The Laboratory provided a quality testing service for samples from three sources; Terminal elevator dryers, farm drying, and Inspection Office (carlots, cargoes, etc.). All Laboratory tests on dried wheat were made by a special Mixograph technique on corresponding before-drying and after-drying samples. When necessary, milling and baking tests were used to confirm the results.

As drying operations at terminal elevators are under the supervision of the Board's Inspection Branch, there was no difficulty in introducing previously established control procedures. Tests were made on samples from each elevator as soon as drying operations were started and were continued until satisfactory drying was established; periodic tests were made thereafter. The major difference between 1959 and 1951 drying operations was that the 1959 wheat was sometimes higher in moisture content. This necessitated a readjustment (principally a lowering of air temperature) of dryers at some elevators to assure safe drying conditions. All dryers installed at Lakehead and Pacific terminals were inspected by personnel from the Laboratory and the Inspection Branch.

In 1959, as in 1951, the Laboratory was faced with the problem of farm drying. Because of congestion in country elevators, farmers were unable to make immediate delivery of their tough and damp grain, and many purchased dryers. Since 1951, farm dryers have undergone further development in the United States where most of them are manufactured. There are many different makes; they are mostly portable recirculating batch dryers fired by propane gas, holding capacity ranges between 200 and 400 bushels, and the cost varies from about \$3,000 to \$6,000. In 1959 there were 14 different makes in use in Canada, comprising a total of 269 dryers, and most of them were in operation in the northern half of Saskatchewan and in northern and western Alberta. As was to be expected, many of the dryers were improperly operated when first put into use, thereby causing considerable damage to the

quality of the grain. To help farmers establish safe drying conditions the Laboratory offered a free testing service on before- and after-drying samples, publicity material was prepared and distributed, radio and television talks were given to warn farmers of the danger of spoiling grain by improper drying, and areas where the problem was most acute were visited by Laboratory personnel. A review of the Laboratory tests shows that there was a marked improvement as farm drying operations progressed.

The Laboratory also co-operated with the Agricultural Machinery Administration Branch of the Saskatchewan government in testing five main makes of farm dryers at their proving grounds in Regina. Results of tests are published in Saskatchewan government A.M.A. publications.

As farm-dried grain would eventually find its way into carlots, the Laboratory set up a program of testing carlots originating at stations in areas where farm drying was being done and which were suspected of containing dried grain. At the outset, a rapid stain test for detecting dried grain, developed by the Laboratory, was used by the Inspection Branch, but experience showed that although the test was positive for barley it was not foolproof for wheat. In these circumstances inspectors had to rely on their judgment in deciding whether a carlot might contain dried wheat and warranted further testing.

The number of tests made by the Laboratory in controlling drying operations during the 1959-60 crop year were as follows: Terminal elevators 840 (1,680 samples); farm dryers 658 (1,316 samples); and inspection samples, carlots, etc. 810. The total number of samples tested was thus 3,806.

Variety Testing

The Laboratory has continued to take a leading part in quality tests of varieties of spring wheat, durum wheat, western winter wheat, and malting barley developed by Canadian plant breeders; these annual studies are sponsored by the Associate Committee on Grain Research. Large seed supplies of Pembina and Canthatch (the two new bread wheat varieties licensed in 1959) have been built up for commercial production in 1961, and it is estimated that 200,000 bushels of Pembina and 450,000 bushels of Canthatch are in farmers' hands for spring seeding. As Pembina is more resistant to both stem and leaf rust than Selkirk, it is expected that the former will displace the latter in some parts of Manitoba and eastern Saskatchewan. Similarly, Canthatch will probably displace Thatcher in some of the other areas in Saskatchewan because of its greater stem rust resistance. Neither of these two varieties is expected to be grown to any extent in Alberta where Thatcher is the predominant variety.

Studies of varieties grown in the Uniform Quality Nursery have been continued, and Canadian plant breeders have been kept informed of the results. This information is utilized for selecting parent stock that combines desired agronomic characteristics with promising qualities. As in the past, the Laboratory has continued to participate in quality studies of wheat varieties grown in the United States under the auspices of the Crop Quality Council, formerly the Northwest Crop Improvement Association. Canadian as well as United States varieties are usually in these tests.

Three new barley varieties (Betzes, Palliser and Jubilee) were licensed by the Canada Department of Agriculture this year for release to farmers. Betzes, an introduction from Poland, is a Two-row rough-awned barley that is eligible for the malting grades. Palliser, which originated from the cross Vantage x Compana, is a Two-row smooth-awned variety that can grade no higher than No. 3 C.W. Two-row. Both varieties are suitable agronomically for growing in southwest Saskatchewan and southeast Alberta, and it is likely that they will replace Compana. Jubilee is a high-yielding rust-

resistant Six-row feed-type barley produced from a cross in which Peatland, Regal, O.A.C.21, and Husky were parents. It is adaptable over a wide area in the central prairies. As there is increasing interest in Two-row barley for production in Western Canada, studies are in progress on some of the newer varieties from Europe. Their malting properties are being examined to determine their suitability as parent stock in the breeding program.

Services to Other Organizations

As in the past the Laboratory's services and technical advice have been given to the Canadian Wheat Board, Commercial Counsellors and Trade Commissioners, and other Government agencies. Much of this work relates to promotion of sales of Canadian grain and plans have been made for an expansion of this program. Comparative quality tests on Canadian wheat and competing wheats from other countries continue to be made in a systematic manner, and the Canadian Wheat Board is informed of the results.

Co-operation in some projects has been maintained with the Brewing and Malting Barley Research Institute, Winnipeg, with the Crop Quality Council, Minneapolis, with certain branches of the Canada Department of Agriculture, and with Canadian grain companies. The Laboratory has continued active participation in the work of the American Association of Cereal Chemists and the International Association for Cereal Chemistry.

Research

Considerable improvement in the facilities and program of basic research has taken place during the year. This is consistent with the generally accepted policy that the Board's Research Laboratory should serve as the principal Canadian centre for research on cereal grain. Modern facilities for studies of the physical chemistry of wheat proteins, amino acid analysis, and lipid chemistry are being acquired.

Further progress has been made in basic research on the physical properties of dough (rheology), an area in which the Laboratory enjoys a high reputation among cereal laboratories in other countries. Kinetic studies of the reaction of bromate in dough are providing basic information on dough chemistry. Considerable success has been achieved in research on the chemistry of lipides in flour and their role in determining the quality of flour.

In applied research on wheat, further improvements have been made in experimental milling techniques, and for hard red spring wheat, results are now equal to those obtained by top commercial mills; research is now being directed to achieving similar performance in milling semolinas from durum wheats. The study of wheat conditioning techniques has been proceeding concurrently with this program. A program of research is once again under way on durum quality, seeking more effective means of measuring and expressing macaroni color. With the recent acquisition of suitable equipment, the investigation of the mechanism of flour deterioration during storage is being reopened. Again this year a number of smaller research projects have been carried out in connection with problems raised by local crop conditions or by overseas buyers.

The four additional malting units for use in barley research have been completed and will be in operation shortly. This completes the program of construction begun several years ago, and provides improved facilities for both service studies and research. During the past year, investigations of varieties of different wort nitrogen content indicate that low wort nitrogen in varieties is accompanied by basic deficiencies, probably of enzymatic nature, which cause reduced brewhouse yield and wort fermentability. Two

cytolytic enzyme systems that differ widely in ratio of viscosity-decreasing activity to saccharide-production activity have been isolated and are under study. As barley anthocyanogen pigments have been recently implicated in production of chill haze in beer, studies on the occurrence of these in Canadian barleys and malts are now under way, and varietal differences in rate of pigment degradation during mashing have been established. In this area, information is being exchanged with the Haze Committee of the European Brewery Convention.

During the year 13 scientific papers dealing with the more basic aspects of research in the Laboratory have been published or have been accepted for publication in scientific journals.

Staff and Facilities

Dr. Narayanan of the Central Food Technological Research Institute, Mysore, India, who, a year ago, received a National Research Council Post Doctorate Fellowship, tenable in the Laboratory, was given an additional award for another year to make it possible for him to continue his studies on lipides and antioxidants under Dr. Hlynka. Mr. R. R. Matsuo is continuing his leave at the University of Alberta where he is studying for a Ph.D degree. Dr. E. J. Bass resigned his position as chemist, after 12 years of service in the Laboratory, to take a senior position with the International Milling Company, Minneapolis. Miss Jean McMullan resigned her position to be married, and Mrs. Cecylia Marek replaced her on the professional staff. One of the two positions for summer students was filled by Mr. Barry McLennan. Several resignations and additions also occurred in the sub-professional staff.

Additional space acquired during the year is being outfitted into an office and laboratory area. The durum wheat equipment will be moved into this area to relieve overcrowding in the baking section.

Overseas Visits and Visitors

In the late spring Dr. Anderson went overseas to attend three scientific meetings: the Congress of International Association for Cereal Chemistry in Vienna, Austria (Dr. Anderson was president of this society); the Scandinavian Association of Cereal Chemists in Oslo, Norway; and the Netherlands Section of Belgian-Netherlands Association for the Study of Cereals, Wageningen. His itinerary also included visits to the Scandinavian countries, Switzerland, Belgium and the United Kingdom. In the fall of the year Dr. Anderson accompanied the Chief Commissioner to Japan and Hong Kong. From there he went to Australia to attend the meeting of the Royal Australian Chemical Institute at Leura. Dr. Anderson also visited wheat-growing areas in northern New South Wales and southern Queensland to study production, handling and storage of Australian grain. The wheat industry in New Zealand was also studied during a short visit to both North and South Islands. Research institutions were visited in both countries and addresses were given to various groups of millers, bakers and cereal chemists.

Dr. Irvine represented the Board of Grain Commissioners at the Netherlands Bakery Foundation (NEBATO) Exhibition in Amsterdam early in the spring. After the meeting, he visited mills, bakeries and research institutions in the United Kingdom, France, Germany and Belgium.

The Laboratory was visited by missions from India, Peru and the Federal Republic of Germany. There were also visitors from the Far and Middle East, Europe, South America, South Africa, New Zealand, Australia, United Kingdom, and U.S.A.

APPENDIX G

Canadian Government Elevators

A. E. JACOBSON, *General Manager*

In accordance with the provisions of Section 166 of the Canada Grain Act and Order-in-Council P.C. 1372 of August 19, 1925, the Board manages and operates five interior terminal elevators at Moose Jaw, Saskatoon, Calgary, Edmonton and Lethbridge, and one terminal elevator at Prince Rupert, and leases one terminal elevator at Port Arthur.

In the 1959-60 crop year, interior and Prince Rupert elevators continued to be operated under a Semi-Public Terminal Elevator License. Port Arthur continued under lease to McCabe Grain Company Limited.

Handlings

Receipts in 1959-60 were 7.8% lower than in 1958-59 (17.4 million bushels, 18.9 million bushels). Shipments were up by 8.5% (18.1 million bushels, 16.7 million bushels) which is reflected in a lower in-store figure at the end of the crop year. Wheat receipts were 4.1 million bushels (24% of total receipts) and barley receipts were 11.6 million bushels (66% of total receipts). Thus, wheat and barley totalled 90% of all receipts. Receipts of rapeseed dropped from 4.6 million in 1958-59 to 1.6 million in 1959-60. Rapeseed was handled at Saskatoon, Calgary and Edmonton; Prince Rupert handled barley only. Receipts and shipments by elevator were as follows:

Elevator	Capacity	Stocks August 1, 1959	Net Receipts	Net Shipments	Stocks July 31, 1960	Audit Adjust- ments
	million bu.	bu.	bu.	bu.	bu.	bu.
Moose Jaw.....	5.50	5,395,723	165,297	185,820	5,375,200	—
Saskatoon.....	5.50	4,379,042	1,396,786	2,235,011	3,540,817	—
Calgary.....	2.50	1,005,479	3,679,424	3,787,733	896,512	-658
Edmonton.....	2.35	1,248,953	2,268,420	2,689,304	828,003	- 66
Lethbridge.....	1.25	950,371	434,064	336,684	1,047,751	—
Prince Rupert.....	1.25	341,229	9,475,678	8,896,326	920,581	—
Totals.....	18.35	13,320,797	17,419,669	18,130,878	12,608,864	-724

Charges

Storage charges at all elevators are unchanged: Interior elevators at 1/45¢, Prince Rupert at 1/30¢ per bushel per day. Storage and elevation charges at Prince Rupert are the same as those in effect at the Lakehead and other Pacific Coast ports. Elevation charges at the interior elevators on wheat, oats, barley and corn are 1¼¢ per bushel, 1¢ per bushel lower than charges at the Lakehead and Pacific Coast ports; charges on rye and flax at 1¼¢ per bushel and 2¾¢ per bushel respectively, are both 1½¢ per bushel lower than at the Lakehead and Pacific Coast ports.

Maintenance

Concrete restoration at the Saskatoon Elevator by the Repair and Reconstruction Unit is virtually completed; the only substantial part left to do being the painting. Similar work is being done in Moose Jaw and is now well advanced. Buildings, machinery and trackage continued to be maintained in good condition.

Work was completed on the installation of dry stand pipes for fire protection at all elevators. The modernization of electrical fixtures and light distribution systems, in compliance with elevator safety codes, is proceeding at Moose Jaw, Saskatoon and Calgary and is almost completed. Similar work was started this year at Edmonton and Prince Rupert. At Port Arthur, electro-magnets were installed to remove metal from grain; a vessel loading spout was installed; the heating system in office buildings revised; and some work was done in repairing revetment channels and tie rods on the dock. At Calgary, one drier was completely replaced by a Randolph direct-heat oil fired unit, thus permitting the drying of all grains, including small oil seeds such as Rapeseed, which was not possible with existing equipment. The other drier was converted from coal to oil heat. At Edmonton, a garner alarm signal system was installed. At Prince Rupert, the railway trestle was replaced in its entirety.

Staff

Staff employed as at December 31, 1960, compared with figures at December 31, 1959, is as follows:

	1960		1959	
	Continuing Establish- ment	Casuals	Continuing Establish- ment	Casuals
Winnipeg (Head Office).....	8	—	8	—
Moose Jaw.....	32	—	32	—
Saskatoon.....	33	8	29	15
Calgary.....	32	4	33	3
Edmonton.....	32	—	32	—
Lethbridge.....	19	1	19	—
Prince Rupert.....	31	—	31	25
Repair and Reconstruction Unit..	3	—	3	4
	190	13	187	47

Revenue and Expenditure

Revenue and expenditure for the fiscal year 1959-60 compared with the previous fiscal year were as follows:

	1959-60	1958-59
Revenue.....	\$1,956,557	\$2,112,904
Expenditure.....	1,552,578	1,382,451
Surplus.....	403,979	730,453

For the first nine months of the current fiscal year revenue was \$1,642,343, and expenditure was \$986,563.

APPENDIX H

Table H-1.—EXPENDITURE, by Point, Branch and General Item, Fiscal Year ended March 31, 1960

Point and Branch	Salaries	Rent	Travel	General	Total
	\$	\$	\$	\$	\$
WINNIPEG					
Executive.....	64,060.22	12,839.92	6,336.29	8,907.74	92,144.17
Assistant Commissioner.....	11,619.96	1,080.00	1,870.61	243.96	14,814.53
Registration.....	41,144.49	4,766.16	403.50	756.92	47,071.07
Research Laboratory.....	216,326.36	36,347.04	9,169.88	77,085.94	338,929.22
Statistics.....	115,416.88	12,471.56	865.24	37,070.44	165,824.12
Appeal Tribunal.....	6,660.00	—	—	959.89	7,619.89
Standards Committee.....	—	—	1,472.07	1,280.00	2,752.07
Inspection.....	581,788.88	29,776.48	6,220.98	77,344.27	695,130.61
Weighing.....	53,677.91	2,173.56	1,484.06	693.14	58,028.67
CHURCHILL					
Inspection.....	25,986.04	15.66	5,245.46	798.76	32,045.92
Weighing.....	15,875.90	10.34	3,720.98	508.48	20,115.70
KEEWATIN					
Inspection.....	3,379.20	—	—	—	3,379.20
Weighing.....	10,192.76	—	—	48.50	10,241.26
SASKATOON					
Assistant Commissioner.....	12,099.96	—	2,180.56	216.87	14,497.39
Inspection.....	42,900.11	877.00	744.03	682.77	45,203.91
Weighing.....	28,906.60	—	55.72	83.00	29,045.32
MOOSE JAW					
Inspection.....	28,634.40	1,740.00	115.92	758.92	31,249.24
Weighing.....	16,871.54	—	—	15.58	16,887.12
REGINA					
Assistant Commissioner.....	13,559.71	1,897.56	1,348.95	386.51	17,192.73
MEDICINE HAT					
Inspection.....	9,096.12	726.00	270.15	170.69	10,262.96
Weighing.....	9,964.46	—	—	26.60	9,991.06
LETHBRIDGE					
Inspection.....	7,743.57	—	803.26	80.11	8,626.94
Weighing.....	4,680.00	—	—	9.00	4,689.00
CALGARY					
Inspection.....	112,187.37	7,297.00	2,573.50	4,497.34	126,555.21
Weighing.....	49,326.65	792.00	1,887.90	164.05	52,170.60
Appeal Tribunal.....	6,660.00	987.00	122.70	1,733.90	9,503.60
EDMONTON					
Inspection.....	110,390.60	9,395.50	2,758.62	6,552.81	129,097.53
Weighing.....	16,637.04	—	62.32	46.84	16,746.20
Appeal Tribunal.....	6,660.00	1,170.00	108.35	960.83	8,899.18
Assistant Commissioner.....	12,099.96	1,992.00	4,404.76	348.54	18,845.26
VANCOUVER					
Inspection.....	217,632.74	8,611.92	2,058.08	7,188.86	235,491.60
Weighing.....	206,833.44	3,293.88	2,529.04	1,606.90	214,263.26
Registration.....	11,914.40	2,239.20	—	343.35	14,496.95
VICTORIA					
Inspection.....	10,439.49	—	—	—	10,439.49
Weighing.....	8,513.00	—	441.63	—	8,954.63

Table H-1.—EXPENDITURE, by Point, Branch and General Item, Fiscal Year ended March 31, 1960—Concluded

Point and Branch	Salaries	Rent	Travel	General	Total
	\$	\$	\$	\$	\$
PRINCE RUPERT					
Inspection.....	13,097.33	—	—	—	13,097.33
Weighing.....	12,438.62	—	—	66.00	12,504.62
FORT WILLIAM					
Inspection.....	829,972.32	24,780.00	8,966.31	16,804.10	880,522.73
Weighing.....	662,631.39	5,328.00	38,239.63	8,283.00	714,482.02
TORONTO					
Inspection.....	9,156.73	1,200.00	269.55	360.08	10,986.36
Weighing.....	4,680.00	—	—	10.20	4,690.20
CHATHAM					
Inspection.....	36,249.52	4,320.00	11,571.70	1,059.56	53,200.78
OTTAWA					
Inspection.....	13,020.00	—	3,999.38	344.01	17,363.39
MONTREAL					
Inspection.....	122,130.14	5,595.00	14,636.08	3,970.55	146,331.77
Weighing.....	5,167.50	1,200.00	64.50	406.58	6,838.58
Registration.....	18,420.00	2,400.00	—	533.18	21,353.18
Totals	3,816,843.31	185,322.78	137,001.71	263,408.77	4,402,576.57

Table H-2.—Accrued Revenue, by Point and Branch, Fiscal Year ended March 31, 1960

Point and Branch	Fees	Samples Sold	Other Revenue (a)	Total
	\$	\$	\$	\$
WINNIPEG				
Executive.....	—	—	—	—
Statistics.....	29,370.00	—	21.50	29,391.50
Registration.....	25,454.93	—	4.76	25,459.69
Appeal Tribunal.....	1,167.00	—	—	1,167.00
Inspection.....	327,980.41	8,529.09	3,203.26	339,712.76
Weighing.....	25,108.03	—	687.81	25,795.84
CHURCHILL				
Inspection.....	68,363.89	—	—	68,363.89
Weighing.....	34,170.94	—	—	34,170.94
KEEWATIN				
Inspection.....	3,390.24	—	392.24	3,782.48
Weighing.....	9,805.86	—	445.72	10,251.58
SASKATOON				
Inspection.....	22,084.53	858.90	—	22,943.43
Weighing.....	11,282.79	—	—	11,282.79
MOOSE JAW				
Inspection.....	7,828.77	285.37	179.40	8,293.54
Weighing.....	4,125.76	—	533.22	4,658.98
MEDICINE HAT				
Inspection.....	15,958.85	165.05	13.12	16,137.02
Weighing.....	11,518.06	—	244.46	11,762.52

Table H-2.—Accrued Revenue, by Point and Branch, Fiscal Year ended March 31, 1960—
Concluded

Point and Branch	Fees	Samples Sold	Other Revenue (a)	Total
	\$	\$	\$	\$
LETHBRIDGE				
Inspection.....	2,124.25	106.66	—	2,230.91
Weighing.....	287.86	—	—	287.86
CALGARY				
Inspection.....	107,296.67	2,549.69	554.25	110,400.61
Weighing.....	20,555.03	—	368.12	20,923.15
Appeal Tribunal.....	2,205.00	—	—	2,205.00
EDMONTON				
Inspection.....	82,832.85	1,522.33	565.00	84,920.18
Weighing.....	4,700.11	—	91.56	4,791.67
Appeal Tribunal.....	993.00	—	—	993.00
VANCOUVER				
Inspection.....	310,728.13	10,211.85	580.24	321,520.22
Weighing.....	235,339.80	—	1,634.44	236,974.24
Registration.....	12,564.45	—	—	12,564.45
VICTORIA				
Inspection.....	5,163.77	—	—	5,163.77
Weighing.....	3,720.38	—	—	3,720.38
PRINCE RUPERT				
Inspection.....	21,628.63	182.60	—	21,811.23
Weighing.....	15,075.78	—	—	15,075.78
FORT WILLIAM				
Inspection.....	611,834.84	8,496.90	1,592.38	621,924.12
Weighing.....	462,353.47	—	3,916.37	466,269.84
TORONTO				
Inspection.....	4,766.88	118.50	4.92	4,890.30
Weighing.....	5,222.30	—	—	5,222.30
CHATHAM				
Inspection.....	30,967.19	475.55	984.61	32,427.35
MONTREAL				
Inspection.....	7,652.34	568.16	760.35	8,980.85
Weighing.....	150.97	—	1.80*	152.77
Registration.....	8,299.91	—	—	8,299.91
Totals.....	2,554,073.67	34,070.65	16,779.53	2,604,923.85

(a) Details in Table H-4.

* Refund of Previous Year's Expenditure.

Table H-3.—Accrued Revenue and Net Expenditure, by Points and Branches, Fiscal Year ended March 31, 1960

	Inspection	Weighing		Appeal Tribunals	Registra- tion	Statistics	Research Laboratory	Grain Standards Commit- tees	Adminis- tration	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
REVENUE										
Winnipeg	339,712.76	25,795.84	1,167.00	25,459.69	29,391.50	—	—	—	—	421,526.79
Churchill	68,363.89	34,170.94	—	—	—	—	—	—	—	102,534.83
Keewatin	3,782.48	10,251.58	—	—	—	—	—	—	—	14,034.06
Saskatoon	22,943.43	11,282.79	—	—	—	—	—	—	—	34,226.22
Moose Jaw	8,293.54	4,658.98	—	—	—	—	—	—	—	12,952.52
Regina	—	—	—	—	—	—	—	—	—	—
Medicine Hat	16,137.02	11,762.52	—	—	—	—	—	—	—	27,899.54
Lethbridge	2,230.91	287.86	—	—	—	—	—	—	—	2,518.77
Calgary	110,400.61	20,923.15	2,205.00	—	—	—	—	—	—	133,528.76
Edmonton	84,920.18	4,791.67	993.00	—	—	—	—	—	—	90,704.85
Vancouver	321,520.22	236,974.24	—	12,564.45	—	—	—	—	—	571,058.91
Victoria	5,163.77	3,720.38	—	—	—	—	—	8,884.15	—	8,884.15
Prince Rupert	21,811.23	15,075.78	—	—	—	—	—	—	—	36,887.01
Fort William	621,924.12	466,269.84	—	—	—	—	—	—	—	1,088,193.96
Toronto	4,890.30	5,222.30	—	—	—	—	—	—	—	10,112.60
Chatham	32,427.35	—	—	—	—	—	—	—	—	32,427.35
Ottawa	—	—	—	—	—	—	—	—	—	—
Montreal	8,980.85	152.77	—	8,299.91	—	—	—	—	—	17,433.53
Totals	1,673,502.66	851,340.64	4,365.00	46,324.05	29,391.50	—	—	—	—	2,604,923.85

Table H-3.—Accrued Revenue and Net Expenditure, by Points and Branches, Fiscal Year ended March 31, 1960—Concluded

	Inspection	Weighing	Appeal Tribunals	Registra- tion	Statistics	Research Laboratory	Grain Standards Commit- tees	Adminis- tration	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$
EXPENDITURE									
Winnipeg.....	695,130.61	58,028.67	7,619.89	47,071.07	165,824.12	338,929.22	2,752.07	106,958.70	1,422,314.35
Churchill.....	32,045.92	20,115.70	—	—	—	—	—	—	52,161.62
Keewatin.....	3,379.20	10,241.26	—	—	—	—	—	—	13,620.46
Saskatoon.....	45,203.91	29,045.32	—	—	—	—	—	14,497.39	88,746.62
Moose Jaw.....	31,249.24	16,887.12	—	—	—	—	—	—	48,136.36
Regina.....	—	—	—	—	—	—	—	17,192.73	17,192.73
Medicine Hat.....	10,262.96	9,991.06	—	—	—	—	—	—	20,254.02
Lethbridge.....	8,626.94	4,689.00	—	—	—	—	—	—	13,315.94
Calgary.....	126,555.21	52,170.60	9,503.60	—	—	—	—	—	188,229.41
Edmonton.....	129,097.53	16,746.20	8,899.18	—	—	—	—	18,845.26	173,588.17
Vancouver.....	235,491.60	214,263.26	—	14,496.95	—	—	—	—	464,251.81
Victoria.....	10,439.49	8,954.63	—	—	—	—	—	—	19,394.12
Prince Rupert.....	13,097.33	12,504.62	—	—	—	—	—	—	25,601.95
Fort William.....	880,522.73	714,482.02	—	—	—	—	—	—	1,595,004.75
Toronto.....	10,986.36	4,690.20	—	—	—	—	—	—	15,676.56
Chatham.....	53,200.78	—	—	—	—	—	—	—	53,200.78
Ottawa.....	17,363.39	—	—	—	—	—	—	—	17,363.39
Montreal.....	146,331.77	6,838.58	—	21,353.18	—	—	—	—	174,523.53
Totals	2,448,984.97	1,179,648.24	26,022.67	82,921.20	165,824.12	338,929.22	2,752.07	157,494.08	4,402,576.57

Table H-4.—Summary of Operations by Branches, Fiscal Year ended March 31, 1960

	Inspection	Weighing	Appeal Tribunals	Registra- tion	Statistics	Research Laboratory	Grain Standards Commit- tees	Adminis- tration	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$
REVENUE									
Fees.....	1,630,602.24	843,417.14	4,365.00	46,319.29	29,370.00	—	—	—	2,554,073.67
Samples Sold.....	34,070.65	—	—	—	—	—	—	—	34,070.65
Other Revenue:									
Overtime Refunded.....	4,912.94	7,849.70	—	—	—	—	—	—	12,762.64
Express Charges.....	3,880.50	—	—	—	—	—	—	—	3,880.50
Jury Fees.....	24.00	72.00	—	—	—	—	—	—	96.00
Fines.....	—	—	—	—	—	—	—	—	—
Refund of Previous Year's Expenses.....	—	1.80	—	—	—	—	—	—	1.80
Miscellaneous Revenue.....	12.33	—	—	4.76	21.50	—	—	—	38.59
Totals.....	1,673,502.66	851,340.64	4,365.00	46,324.05	29,391.50	—	—	—	2,604,923.85
EXPENDITURE									
Salaries.....	2,173,804.56	1,106,396.81	19,980.00	71,478.89	115,416.88	216,326.36	—	113,439.81	3,816,843.31
Rent.....	94,334.56	12,797.78	2,157.00	9,405.36	12,471.56	36,347.04	—	17,809.48	185,322.78
Travel.....	60,233.02	48,485.78	231.05	403.50	865.24	9,169.88	1,472.07	16,141.17	137,001.71
General Expenses.....	106,227.75	6,845.99	3,631.85	1,428.35	6,861.78	71,191.99	1,280.00	8,545.89	206,013.60
Printing and Stationery.....	14,385.08	5,121.88	22.77	205.10	30,208.66	5,893.95	—	1,557.73	57,395.17
Totals.....	2,448,984.97	1,179,648.24	26,022.67	82,921.20	165,824.12	338,929.22	2,752.07	157,494.08	4,402,576.57

APPENDIX I

Regulations

Regulations in effect December 31, 1960, made in accordance with the provisions of the Canada Grain Act

Regulation
No.

- 1 Registration and Cancellation of Terminal Elevator Warehouse Receipts.
- 2 Registration and Cancellation of Eastern Warehouse Receipts and Transfer Receipts.
- 3 Plans re Terminal and Eastern Elevators.
- 4 Cleaning of Grain and Bins.
- 5 Off Grades for Western Grain.
- 6 Off Grades for Eastern Grain.
- 7 Grades of Screenings.
- 8 Inspection of Samples taken other than at an Inspection Point.
- 9 Appeals from Inspecting Officers to Grain Appeal Tribunals.
- 10 Delivery of Grain to Ocean Vessels at St. Lawrence Ports.
- 11 Delivery of Grain to Ocean Vessels at West Saint John, N.B.
- 12 Delivery of Grain to Ocean Vessels at East Saint John, N.B.
- 13 Delivery of Grain to Ocean Vessels at Halifax, N.S.
- 14 Enforcement of Lien by Sale of Grain.
- 15 Drying of Grain.
- 16 Fees.
- 17 Records, Reports and Returns.
- 18 Procedure, Country Elevators.
- 19 Receipt for Grain Delivered to Private Country Elevators and Mill Elevators.
- 20 Maximum Tariff of Charges, Eastern Elevators.
- 21 Maximum Tariff of Charges and Shrinkage Allowance, Country Elevators.
- 22 Maximum Tariff of Charges, Terminal Elevators.
- 23 Applications for Licenses, and Terms and Conditions under which Licenses are issued.
- 24 Storage in Transit of Grain Grown Outside Canada.
- 25 Tickets and Receipts—Country Elevators.
- 26 Grain Treated with Poisonous Materials.
- 27 Shipment of Infested Grain.

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CANADA

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Grain Commission, Board of

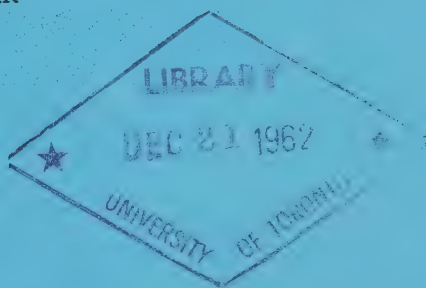
ANNUAL REPORT

OF THE

Board of Grain Commissioners for Canada

FOR THE YEAR

1961



DEPARTMENT OF AGRICULTURE

OTTAWA, CANADA

Minister:

HON. ALVIN HAMILTON, M.P.

Deputy Minister:

S. C. BARRY

ROGER DUHAMEL, F.R.S.C.

QUEEN'S PRINTER AND CONTROLLER OF STATIONERY

OTTAWA, 1962

Price: 35 cents



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Winnipeg, Manitoba,
January 22, 1962.

The Honourable Alvin Hamilton, M.P.,
Minister of Agriculture,
Ottawa, Canada.

Sir:

We beg to submit herewith Report of the Board of Grain Commissioners for Canada for the year 1961 in compliance with Section 23 of the Canada Grain Act.

This report records information and statistics relating to grain handlings for the crop year August 1, 1960 to July 31, 1961, expenditures and revenue for the fiscal year April 1, 1960 to March 31, 1961, and summarizes the major activities of the Board for the 1961 calendar year.

Grain Supplies and Disposition—Crop Year 1960-61

The most significant development of the 1960-61 grain handling season was the substantial increase in Canada's wheat export movement which took place during the latter half of the crop year. Although 1960 grain production included average or above crops of wheat, oats and flaxseed, the heavier export movement more than offset this production and total year ending stocks of the five principal grains at July 31, 1961, were estimated at 744.5 million bushels, just over 2% below the previous year's closing supplies of 763.5 million bushels.

Canadian grain stocks on August 1, 1960, were estimated at 763.5 million bushels wheat, oats, barley, rye and flaxseed combined, held either in farmers' bins or in licensed storage or in transit between elevator positions. The 1960 crops of 489.6 millions of wheat, 456.1 millions of oats, 10.1 millions of rye and 23.0 million bushels of flaxseed were above the previous year's levels for these four grains while barley production at 207.1 millions was some 8% below the 1959 crop of that grain. The inward carryover augmented by this production of 1,185.9 millions provided a combined available supply of 1,949.4 million bushels of the five grains for Canadian domestic use or export during the 1960-61 season—some 56 millions greater than supplies available during the previous season.

Canada's export shipments of grain and wheat flour at 406.5 millions were 54.5 million bushels heavier than clearances reported for 1959-60. Increased domestic needs boosted Canadian usage for feed, seed, food and industrial use to 798.4 million bushels—a peace time record for home consumption. The combined domestic and export disappearance of 1,204.9 million bushels was approximately 75 millions above the previous year's usage and more than offset the heavier supplies to result in the 19.0 million bushel reduction in closing stocks—744.5 million bushels held in all positions at July 31, 1961.

The impetus to internal grain handling resulting from the expanded export trade was reflected in an increased forwarding movement throughout the entire system. Although the upswing in exports did not begin to exert its full influence until after the mid-point of the crop year, by the close of the season handlings in almost every sector showed moderate to substantial increases over 1959-60 levels.

Marketing

Despite the fact that country elevator storage levels averaged close to the 300 million bushel level, or over 75% of licensed capacity, the increased forwarding movement enabled Canadian grain producers to market 549.4 million bushels of the five principal grains during the 12-month period. The major portion of this —540.1 millions—was delivered to western country elevators. Prairie farmers marketed 5.4 millions through interior mills and terminal elevators and loaded .2 million bushels over railway loading platforms. Some 3.7 million bushels of eastern grown grain, chiefly wheat were delivered to licensed eastern elevators. It is of interest to note that the increase in marketings actually preceded the pickup in internal forwarding and at the end of January marketings were some 34 million bushels ahead of the previous year's level whereas by the close of the season they were only 30 million bushels heavier than the 1959-60 deliveries.

Country Elevator Shipments

Western country elevators reported a better than 50 million bushel increase in grain car loadings with all of this gain achieved during the closing months of the 1960-61 season. The 576.5 million bushel total shipments reflected heavier loadings of wheat (410.1), oats (41.6), rye (5.7) and flaxseed (17.8) millions while barley shipments declined fractionally at 101.3 millions for the crop year. To meet the requirements of heavier Pacific Seaboard exports an increased portion (27.7%) of the total carlot movement was billed to West Coast ports. Shipments to the Lakehead accounted for 57.5% of the country loadings, carlots to Churchill just under 3.1% and supplies for western mills and manufacturing plants represented 9.8% of the total country elevator loadings.

Terminal Handlings

The heavier country elevator shipments were reflected in a 26.2 million bushel increase in Fort William-Port Arthur grain unloads (325.9 millions) and a 24.7 million bushel expansion in lake grain cargoes (311.4 millions). The direct overseas portion of this vessel movement held steady at 16.2 millions. A further 2.7 million bushel decline occurred in vessel shipments to the U.S. lake ports which dropped to 16.7 millions. The Lakehead direct to St. Lawrence ports movement rose to 115.0 million bushels indicating a further elimination of the intermediate ports transfer handlings which prevailed prior to the opening of the Seaway and which has declined progressively in each subsequent year.

Pacific Coast terminals, shipping to meet expanded export sales and in particular the requirements of wheat and barley to Communist China, reported a 23.0 million bushel increase in 1960-61 ocean loadings over 1959-60 levels. This gain did not fully reflect the considerable increase in the tempo of handlings during the six month February to July period when loadings accounted for approximately 2/3 of the 159.8 millions total export clearances. The wheat portion of this crop year movement amounted to 124.2 millions compared with 95.1 millions in 1959-60, oats .2 millions, barley 27.0 millions, rye 1.0 millions and flaxseed 7.4 millions. These West Coast ports also handled the bulk (7.7 millions) of Canada's rapeseed exports.

Export shipments from the port of Churchill totalled 20.1 millions for the 1960-61 crop year—a volume 1.6 millions short of the previous year's record movement. The 1961 season of navigation total at Churchill was 19.4 millions of wheat carried in 48 vessels. The first 1961 cargo from this port commenced loading on July 24, one of the earliest openings on record. The last grain boat cleared on October 11.

Eastern Elevator Handlings

The grain movement through eastern Canadian ports, in particular the St. Lawrence sector registered its first major improvement in the Canadian grain portion since 1957-58. St. Lawrence ports cleared 123.4 million bushels of Canadian grain, chiefly wheat, during 1960-61 compared with only 93.6 millions in the previous year. Montreal loaded 66.4 millions, Sorel 18.2 millions, Three Rivers 14.1 millions and Quebec 6.7 million bushels. Baie Comeau in its first complete year of operations shipped a total of 18.0 million bushels of Canadian grain for export. The Maritime ports of Saint John and Halifax also reported a heavier winter movement shipping 34.0 millions—9.0 millions better than the 1959-60 loadings and the heaviest volume through this sector since the 45.2 millions cleared in 1955-56.

The transfer movement, that is the lake or rail reforwarding from Bay and Upper Lake ports to seaboard declined further from 97.6 millions in 1959-60 to 82.9 millions during the crop year under review. This decline occurred despite the heavier volume of western grains moving down the lakes to meet expanded domestic and export requirements. As referred to above, St. Lawrence ports drew 115.0 million bushels of their requirements by vessel direct from the Lakehead compared with 73.7 millions in 1959-60 and an average of 10 to 15 million bushels per year in the period prior to the opening of the Seaway. Maritime ports of Saint John and Halifax continued to obtain the major portion of their grain on a combined lake and rail basis via Bay Ports although some 3.7 millions of grain did move by direct vessel from the Canadian Lakehead to Halifax and other local maritime ports via the all-water route.

Eastern elevators handled an expanded volume of U.S. grain in 1960-61 receiving some 56.4 million bushels, moving 37.7 millions overseas and shipping 15.0 millions to Canadian domestic users. The major grain involved in this movement was U.S. corn. Eastern elevators shipped 13.9 million bushels of U.S. corn overseas and moved 12.6 millions to Canadian domestic outlets. Export transshipments of U.S. wheat amounted to 12.0 millions while loadings of U.S. soybeans for export totalled 8.6 millions. Eastern elevators supplied 115.8 million bushels of western grain to meet eastern requirements for domestic purposes including feed grains and wheat for milling into flour, a portion of which moved into export channels. The individual grains breakdown of this total included wheat 54.3 millions, oats 28.4 millions, barley 29.6 millions, rye 1.1 millions and flaxseed 2.4 million bushels.

Exports

Canada exported through its licensed elevator system 311.0 million bushels of wheat, 1.9 millions of oats, 41.5 millions of barley, 2.6 millions of rye and 13.6 million bushels of flaxseed, during the 1960-61 crop year. A further 35.9 million bushels of wheat moved overseas in the form of wheat flour. The bulk wheat shipments reflected a 76.3 million bushel increase over the 1959-60 export trade and were the third highest clearances on record. The flaxseed exports were slightly heavier than those recorded for the previous year; the flour clearances were relatively steady while moderate to substantial declines were registered in the export totals for the other three grains in comparison with 1959-60. However, the combined total of the five grains and wheat flour, boosted by the wheat clearances, totalled 406.5 million bushels, 54.5 millions above the corresponding 1959-60 total and 86.0 millions heavier than the long term, 30-year average of these clearances. The 311.0 million bushels of Canadian wheat exported in bulk form through the elevator system during 1960-61 was exceeded only twice in Canadian grain trade

history—once in 1928-29 when clearances totalled 354.4 millions and then in 1952-53 when 329.0 millions were exported either overseas (306.1 millions) or to the United States (22.9 millions). Further details of this export movement appear in the special report of the Statistics Branch entitled "Canadian Grain Exports Crop Year 1960-61". On the basis of international grain movement estimates compiled by the Cereal Section of the Food and Agriculture Organization in Rome, Canada's exports represented 23.1% of the world trade in bread grains thereby indicating that Canada maintained her position with respect to the expanded and record level of international wheat and wheat flour movement.

Domestic Usage

Canada's domestic grain requirements for seed, feed and industrial processing for food and other products were expanded by 20.9 million bushels during the 1960-61 season to involve a total of 798.4 million bushels of wheat, oats, barley, rye and flaxseed combined. Crop year balances indicate that domestic disappearance involved heavier quantities of all grains excepting flaxseed. Canadian utilization of the two principal feed grains, oats and barley, was increased by 13.4 and 4.9 million bushels respectively. The total utilization of all grains combined was at the highest level ever recorded in peace time history. Again as in previous years the bulk of the 1960-61 increase involved direct feeding from farm stocks with the portion of total domestic usage represented by grain handled through licensed elevator channels remaining relatively steady at approximately 160 million bushels. Of this latter movement the industrial requirements for domestic flour, food, distilling, malting and crushing absorbed approximately 76 million bushels almost unchanged from the previous year's level. Preliminary calculations of domestic usage by individual grains compared with revised data for the 1959-60 season are as follows: wheat 153.5 (152.8), oats 451.9 (438.5), barley 179.4 (174.5) rye 6.9 (4.8) and flaxseed 6.7 (6.9) million bushels.

Carryover

The combination of sharply increased exports and the further expansion in domestic grain utilization more than offset the larger 1960 grain crops. The combined disappearance of 1,204.9 million bushels of the five principal grains exceeded new production by 19.0 millions to reduce the year end carryover by that amount. Individually by grains there was a drop of 10.8 millions in wheat stocks and 13.9 millions in barley holdings. Closing stocks of oats were 2.3 millions, rye .7 millions and flaxseed 2.7 millions heavier than the inward carryover of these grains. Elevator returns and farm stock estimates placed the July 31, 1961 carryover as follows by individual grains: wheat 526.8 millions, oats 95.1 millions, barley 107.6 millions, rye 7.4 millions and flaxseed 7.6 millions for a total carryover of these five grains of 744.5 million bushels, representing combined holdings east and west on farms, in licensed elevators and in transit between positions at the year end. This is, of course, substantially below the all-time record Canadian grain carryover held on July 31, 1957—1,120.3 million bushels.

Licensing and Bonding

The total licensed storage capacity at July 31, 1961, was 649,308,710 bushels—644,703,810 bushels in elevators, and 4,604,900 bushels in grain storage buildings authorized as supplementary annexes to country elevators. This represents an increase of 10,254,100 bushels in capacity since July 31, 1960. However, the number of licences in effect for country, terminal, mill and eastern elevators showed a decrease, totalling 5,375 at July 31, 1961,

compared with 5,413 the previous crop year ending. Country elevator capacity was increased by 8.4 millions while terminal facilities rose 4.9 millions, due mainly to new construction at the Lakehead. Authorized grain storage buildings were reduced in number to 96 from 147 a year ago, representing a storage capacity withdrawal of 2.6 million bushels. Mill elevator capacities were reduced by approximately 1.0 million bushels.

Assistant Commissioners

Through its four Assistant Commissioners, the Board kept in close touch with the operation of licensed country elevators in the Western Division. During the year 1961, the Assistant Commissioners inspected 659 elevators in Manitoba, 780 in Northern Saskatchewan, 218 in Southern Saskatchewan, and 804 in Alberta, a total of 2,461. This inspection included checks on scales, sieves, moisture meters and certain other equipment; deductions for shrinkage and Prairie Farm Assistance Act Levy; and posting of current Board Regulations applying to country elevators.

Complaints originating from country points totalled 13, as compared with 11 in the previous year.

Disposition of complaints investigated was as follows:

	Manitoba	Saskatchewan	Alberta	Total
No grounds for complaint.....	1	4	2	7
Settlement effected.....	1	—	4	5
Not yet disposed of.....	—	1	—	1
TOTALS.....	2	5	6	13

The Assistant Commissioners received and handled numerous inquiries on various matters related to country elevator operation.

Prosecutions

No penalties were levied during 1961 for breaches of the Canada Grain Act or the Board's Regulations and orders.

Shortages and Overages, Country Elevators

Country elevator stocks averaged 300 million bushels over the 1960-61 crop year and at certain periods were as high as 325 millions out of a mid-season licensed capacity of 374 million bushels. This heavy storage level severely limited the opportunity to weigh over the grain stocks, and country elevator companies reported complete weigh-ups of only 1,434 elevators during the crop year, nearly 700 fewer than were completed in the previous season. The reported weigh-ups indicated a somewhat higher proportion of shortages but no really significant change from the patterns of previous years' audits.

Elevators Reporting	1960-61	1959-60
Shortages.....	425	585
Neither Overages nor Shortages.....	2	4
Overages of less than .25%.....	670	980
Overages of .25% to .50%.....	249	413
Overages over .50%.....	88	119
Total elevators weighed over.....	1,434	2,101

The Board summoned 118 agents of country elevator licensees to appear at hearings held at Winnipeg, Regina, Saskatoon, Calgary and Edmonton, in connection with excessively high overages. At these sessions, members of the Board interviewed the agents and examined records concerning their operations in the presence of senior officials of the companies concerned.

Regulations

The following amendments were made to the Board's Regulations, effective August 1, 1961:

Regulation No. 5: The section headed "Dried" was revised by the provision of a new grade designation for higher grades of wheat damaged in artificial drying. Percentages of moisture for tough and damp grades of beans and safflower seed were inserted.

Regulation No. 7: The grade of screenings known as "Oat Screenings" was abolished.

Regulation No. 18: A change was made in the wording of the approved form of "Cleaning Receipt" to be used at licensed country elevators.

Committees on Grain Standards

The Board constituted Committees on Western and Eastern Grain Standards for the Crop Year 1961-62 as provided in Section 25 of the Canada Grain Act. Personnel of these Committees is listed in Appendix A.

A meeting of the Western Committee was held at Winnipeg on October 12, 1961. The members received numerous reports relating to quality of crops grown in the 1961 season and to various other matters in connection with grading of grain, and also selected and settled standard samples and standard export samples for various grades of Western grain.

The Eastern Committee met in Toronto on August 17, 1961, and in Montreal on October 24, 1961, and established standard samples for grades of grain grown in Eastern Canada.

Both groups authorized continued use of previously selected standard samples in instances where suitable recent samples for established grades were not available.

Inspection of Grain

In 1961, grain crops in Western Canada were the lowest in average yield, and the highest in average quality, for several years. Subsoil moisture reserves were extremely low in the spring. Only central and northern Alberta received adequate rainfall through the growing period; over the rest of the Prairies hot weather reduced the stooling of crops and caused early ripening. The harvest weather was exceptionally fine, so average moisture content of grain is unusually low.

Wheat crops produced better kernel size than was anticipated, so grades are higher than for several years. It was estimated that 85% of the red spring crop would grade No. 1 or No. 2 Northern; and the grade of No. 1 Hard is being delivered from a few country points. Breakage of kernels, on account of low moisture content, is a degrading factor. The same applies also to durum and winter wheats.

Barley from the northern areas of Saskatchewan and Alberta was generally of fine basic quality, highly acceptable to the malting trade; but across the southern part of the Prairies the drought caused excessive thin kernels. Low moisture content of this grain contributed to peeling and breaking of kernels, with resultant loss of grade.

Oat crops suffered badly from drought over a wide area, and shipments are expected to be light on account of the shortage of feed in many districts. Rye produced light crops, but good quality grain; the incidence of ergot and smudge was low, as expected during a dry year.

Flaxseed and rapeseed yields were low and grades high in the central and southern areas. Yield and quality were generally good in northern areas, but some damage was caused by rain and snow at harvest time.

Production of domestic mustard seed was extended into Saskatchewan and Manitoba in 1961, but reduced acreage of this crop in Alberta resulted in a net decrease of about 10% in total acreage. Some of this crop suffered seriously from drought.

There have been no reports of safflower seed being grown in southern Alberta in 1961; exporters had trouble in meeting the quality requirements of the export market, so quit handling this seed.

The pea bean crop in southern Alberta was very small; acreage dropped to about 500, and drought and hail damage caused very poor yields.

Moisture reserves in Western Canada in the fall of 1961 were reported to be the lowest in 77 years, so unless more than normal precipitation is received through the winter and spring, low yields of grain must be expected in 1962.

Research Laboratory

The Laboratory provided quality information on the 1961 grain crops and on grain marketed in 1960-61 to the Committee on Western Grain Standards. The findings were published in maps, crop bulletins, and quarterly cargo bulletins. This year improvements have been made in crop bulletins; essential parts of "Canadian Wheat 1961" are now published in English, French, German and Spanish; data are now reported for a western and an eastern prairie region to correspond to Pacific and Atlantic cargo shipments. Quarterly cargo bulletins continue to be published in four languages, and for the last two quarters of the 1960-61 crop year an English-Japanese edition was published.

Amongst services provided the Inspection Branch control of moisture-testing equipment and analyses of individual cargoes were of major importance. The Laboratory again gave special attention to studies relating to grain moving in and out of Pacific port elevators. Wheat from this port shows a greater variability in quality than wheat shipped from Atlantic ports. Studies of new varieties were undertaken as usual. This year a world-wide collaborative study on three new promising wheat varieties was completed to test their suitability for overseas markets. By joint agreement the Canadian Wheat Board and the Board of Grain Commissioners established a Technical Services and Market Research Department to study grain requirements of importing countries and to provide technical services and advice. Research projects completed during the year have been published in eleven papers appearing in appropriate scientific journals.

The Director of the Laboratory accompanied the Chief Grain Inspector on a technical mission to the Peoples' Republic of China to study grain handling facilities and inspection services. Members of the Laboratory staff also visited the United Kingdom, the U.S.S.R., and various countries in Europe and the Far and Middle East. The Laboratory was also visited by missions and visitors from several countries in these areas.

A summarized account of the work undertaken by the Laboratory is given in Appendix F and more complete and detailed information will be published in the Laboratory's Annual Report for 1961.

Weighing of Grain

The staff of the Board's Weighing Branch provided usual weighing services at licensed elevators and investigated complaints relating to reports of excessive outturn shortages on carlot and cargo shipments. The Board's scale inspectors carried out periodic tests and inspections of scales at licensed terminal and eastern elevators, and made special inspections when such were considered necessary. Further detailed information in regard to the work of this Branch is given in Appendix E.

Weighover of Stocks, Terminal and Eastern Elevators

In accordance with the provisions of Sections 139 and 140 of the Canada Grain Act, 25 terminal and 25 eastern elevators were weighed over during the 1960-61 crop year by members of the Board's Weighing and Inspection staffs.

Deferments into the following crop year were made at 11 terminal elevators at the Lakehead, 9 terminal elevators at other points, and at 4 eastern elevators. The Board found it necessary to grant these deferments to avoid delaying the handling and loading of grain required to meet export orders. However, it was possible to carry out six of these deferred weighovers before the end of December, 1961.

Tables C-12 to C-14 of Appendix C contain the results of weighovers carried out in the 1960-61 crop year.

Entomological Investigations

The regular program of inspection of terminal elevator premises and grain stocks to protect Canadian grain in storage from losses by insects and other grain pests was continued in 1961. Most of the terminal elevators were visited at least once during the year. The elevators in the St. Lawrence River area were visited on two occasions and the elevator at Halifax three times. One trip was made to the Pacific Coast terminals. The conditions existing at the time of each inspection were discussed with management and when necessary, instructions were issued regarding control measures.

In general the terminal elevators were essentially free from insect pests. The most serious infestation was one of grain moths in the elevator at Halifax. Fumigation was necessary to control the problem but fortunately it occurred at a season of the year when the treatment could be carried out without interference with shipping.

Because of the large amount of grain being shipped through the Pacific Coast terminals to fulfill the contracts with China, the stepped-up program of pest control in that area has been continued.

As in past seasons a considerable amount of United States grain is being shipped through the St. Lawrence Seaway for export through Canadian elevators. Considerable checking has been carried out throughout the season on this grain stored in Canadian elevators. One large lot was found to be infested and required fumigation.

The usual inspection of all of the Canadian Government Elevators was carried out in 1961. Because of the greater volume of grain shipping, some of the older stocks have been moved from the interior terminals. Large representative samples were drawn from the bottom of all of the storage bins and examined for insect infestation.

Two short courses for grain elevator personnel were given in February, 1961, at Montreal and Toronto. The attendance at each meeting was approximately 50, consisting of elevator representatives from both plant and

management. A 37-page summary of the course was issued to those in attendance. The courses were very well received and there was a lively discussion at the conclusion of each section. This educational work by the Board is greatly appreciated by the grain trade.

A section entitled "Stored Grain Pests, Detection, Identification and Control" was prepared for the Grain Inspectors' Manual which was issued in 1961.

For several years an analysis has been made of the carlots of grain found to be infested with grain insects at time of unload at terminal elevators. As a result of these studies an article entitled "Fumigation of Infested Grain" was prepared and discussed with elevator superintendents at Port Arthur in March, 1961. This has resulted in a great improvement in the handling and treatment of these cars during the current season.

Close contact has been maintained with the various grain inspection offices of the Board by regular visits during the season when insect control was discussed with staff members.

The Board's Entomologist, Dr. H. E. Gray, has continued to maintain contact with the grain and milling trade. He attended the annual convention of the Association of Operative Millers in Minneapolis, Minn., in May, 1961.

Close liaison has been maintained throughout the year with the Plant Protection Division and the Canadian Wheat Board on matters relating to grain storage and grain-infesting insects.

Terminal and Eastern Complaints

During 1961, the Board directed the investigation of 62 complaints relating to reports of excessive outturn shortages on shipments to Eastern Canadian and U.S.A. points. Included were 51 on vessel shipments from Fort William and Port Arthur, 2 on vessel shipments from Eastern transfer ports, 7 on vessel shipments from other ports, and 2 on carlot shipments.

These complaints were disposed of as follows:

No cause of reported discrepancy found	30
Settlement effected	16
Complaint withdrawn	2
Not yet disposed of	14
TOTAL	62

Complaints on Export Shipments

A total of 39 complaints relating to shipments to overseas destinations were dealt with by the Board and its officials during 1961. Of this number, 22 concerned outturn weights reported from overseas, and 17 referred to some aspect of the quality of grain cargoes.

Disposition was as follows:

	Quality	Weight
No cause of reported discrepancy found	—	21
No grounds for complaint	17	—
Complaint withdrawn	—	1
TOTALS	17	22

Statistics

Statistics relating to Canadian grain movement collected and compiled by the Board's Statistics Branch are presented in Appendix C of this report.

Information Program

The Board's Mobile Grain Grading Exhibit which is housed in a large trailer was on display at 15 Agricultural Fairs in Western Canada during 1961. This exhibit features a display of the main grades of grain in open containers and smaller samples of the off-grades. The Grain Inspectors in charge are thus able to illustrate almost any grade the visitor might be interested in.

Coloured photographs and posters illustrate the various phases of the Board's operations and outline the farmers' rights and privileges under the Canada Grain Act. A special panel on malting barley supplies information on grade requirements and harvesting.

A smaller exhibit was prepared along the same lines for showing at the University of Saskatchewan Farm and Home Week, the Calgary Seed Fair and the Manitoba Winter Fair at Brandon. Keen interest was shown by farmers, elevator agents and other interested visitors in the various grades of grain and in the operations of the Board.

The Board's offices were visited by a number of officials of the Foreign Trade Service of the Department of Trade and Commerce, and by other individuals and groups from Overseas and the United States who wished to discuss matters related to the grain trade and obtain first-hand information about the functions and services of the Board. Other visitors during the year included groups of country elevator agents and agriculture students.

In addition to discussions with members and officials of the Board, arrangements were made for visitors to tour the Inspection Branch, the Research Laboratory and other branches as desired; also to view the colour motion picture film "Grain Handling in Canada".

Members of the Board and senior officials again accepted a number of invitations to address annual meetings of producer organizations and to discuss topics of current interest related to the Board's work.

Canadian Government Elevators

Receipts of grain during the crop year 1960-61 at the Canadian Government Terminal Elevators operated by the Board at Moose Jaw, Saskatoon, Calgary, Edmonton, Lethbridge and Prince Rupert, were 19.9 million bushels, compared with 17.4 millions in the previous crop year. Total shipments were 21.1 millions, an increase of 3.0 millions from the corresponding figure for 1959-60.

In the fiscal year 1960-61, revenues exceeded expenditures by the amount of \$504,800.

Lake Freight Rates

On March 10, 1959, under the provisions of Section 5 of the Inland Water Freight Rates Act, the Board issued Order No. 21 which revoked Order No. 20 of September 28, 1954. This had the effect of cancelling maximum freight rates established by the Board in Order No. 20 for the carriage of grain from Fort William or Port Arthur to other specified ports in Eastern Canada.

The average rates charged during the 1961 season of navigation are given in Table C-11 of Appendix C.

Prairie Farm Assistance Act

Under provisions of Section 11 of the Prairie Farm Assistance Act the Board continued to collect the one per cent levy on grain purchased by licensees under the Canada Grain Act. During the crop year 1960-61 the amount collected was \$6,941,094.00, an increase of \$614,170.00 over collections recorded for the previous crop year. Collections by the Board since the inception of the Act to July 31, 1961, total \$127,253,208.00.

Organization and Personnel

On January 17, 1961, after eleven years of service with the Board, five as Chief Commissioner, Mr. R. W. Milner retired. Mr. G. N. McConnell, Commissioner since December 10, 1956, was appointed Chief Commissioner. Mr. A. V. Svoboda, Assistant Commissioner at Saskatoon, was appointed Commissioner and Mr. F. F. Hamilton was named as his successor. Mr. C. J. Hunt, Assistant Commissioner at Regina, died on May 28, 1961.

Two Chairmen of the Grain Appeal Tribunals retired during the year; Mr. R. E. Forrester of Calgary and Mr. A. M. Creighton of Edmonton, at which time the Edmonton Tribunal was abolished. Mr. J. L. A. Doray, Grain Inspector-in-charge at Saskatoon, was appointed Chairman at Calgary.

There were several changes in senior personnel of the Inspection Branch. Mr. A. H. Gibbons, Grain Inspector-in-charge at Fort William, retired at the end of 1961 after forty years of service. Mr. C. W. Hammond was promoted to Grain Inspector-in-charge. Mr. H. McArthur retired as Inspector-in-charge at Vancouver and was succeeded by Mr. J. H. McLean. Mr. P. Thomson was promoted to Inspector-in-charge at Saskatoon replacing Mr. J. L. A. Doray.

Mr. J. J. Manson, Chief Grain Weighman, retired after thirty-five years of service. This position was filled by the promotion of the Assistant Chief Grain Weighman, Mr. H. C. Britton, and Mr. J. A. Morrison was promoted to the resulting vacancy.

Under the direction of Dr. G. N. Irvine, Assistant Director of the Grain Research Laboratory, and in conjunction with the Canadian Wheat Board, a Technical Services and Market Research Bureau was established to support the marketing program for Canadian wheat and other grains.

Mr. A. E. Jacobson, General Manager of the Canadian Government Elevators since 1953, retired after 44 years of service. Mr. G. E. North, Assistant to General Manager, also retired during the year after 45 years of service. Mr. A. H. Wilson, Superintendent at Moose Jaw, was promoted to General Manager and was replaced by Mr. L. V. Reaman, and Mr. M. J. Van Buekenhout succeeded Mr. North. Mr. J. H. Waterhouse replaced Mr. Reaman as Superintendent at Lethbridge.

As at December 31, 1961, the Board's staff totalled 903 as compared with 910 at the end of the previous year. The staff of the Canadian Government Elevators numbered 229, an increase of 26 over the previous year.

A chart of the Board's organization, including further details of staff location, follows this report.

Expenditure and Revenue

Total expenditure and accrued revenue of the Board, exclusive of the Canadian Government Elevators, for the fiscal year 1960-61 compared with 1959-60 was as follows:

	1960-61	1959-60
Expenditure	\$4,695,575.81	\$4,402,576.57
Revenue	2,502,632.32	2,604,923.85

Expenditure for the nine months of the 1961-62 fiscal year to December 31, 1961, totalled \$3,671,359 as against \$3,151,475 for the comparable period during 1960-61.

Cash revenue for the same nine-month period amounted to \$2,226,156 as compared with \$1,947,624 in the previous year.

Attached hereto is a series of Appendices which outline in greater detail the work of the Board's Branches.

Respectfully submitted,

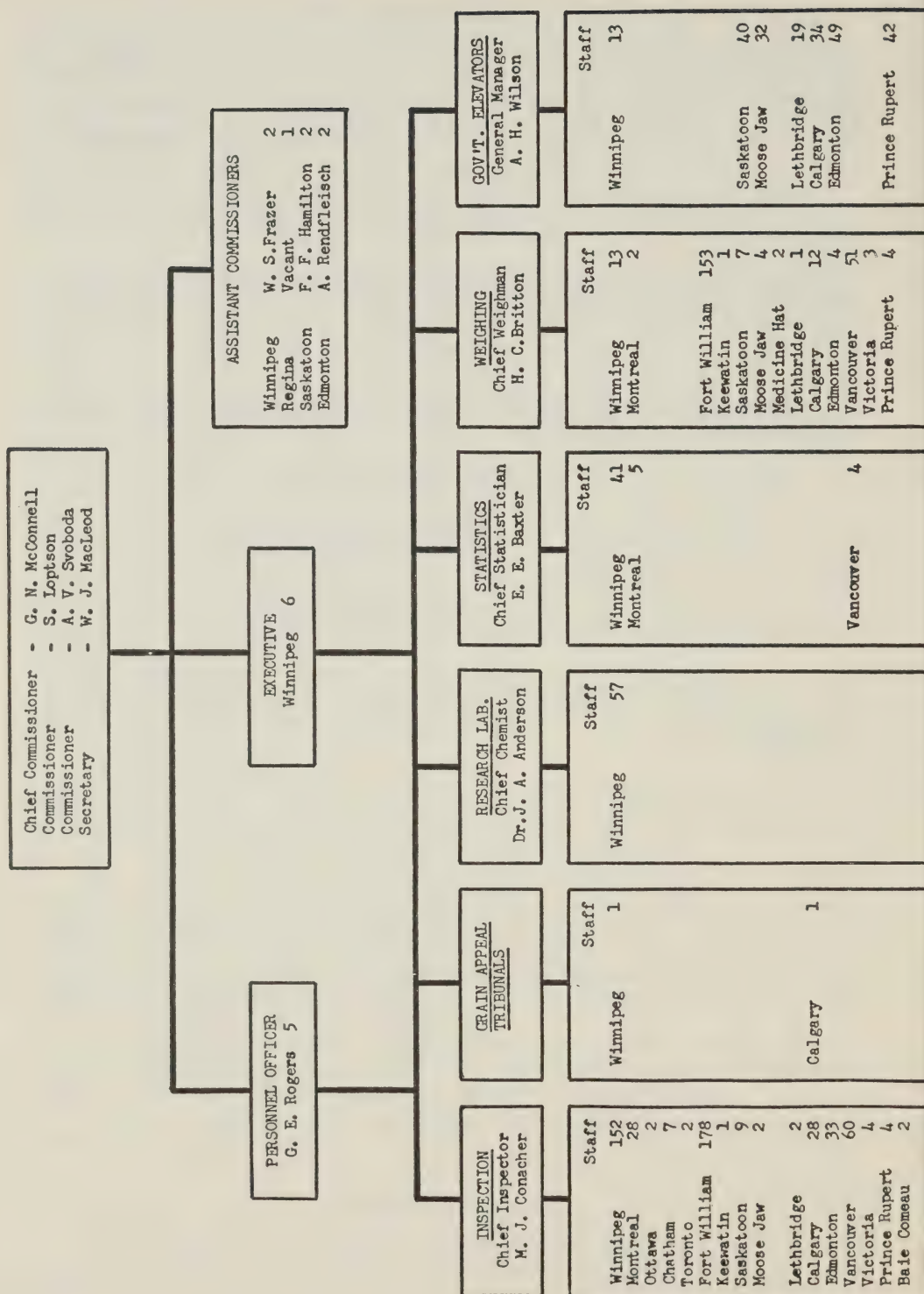
GEO. N. McCONNELL,
Chief Commissioner

S. LOPTSON,
Commissioner

A. V. SVOBODA,
Commissioner

W. J. MacLEOD,
Secretary

BOARD OF GRAIN COMMISSIONERS FOR CANADA



APPENDIX A

Committee on Western Grain Standards as at December 31, 1961

G. N. McConnell, Chief Commissioner, Board of Grain Commissioners.
S. Loptson, Commissioner, Board of Grain Commissioners.
A. V. Svoboda, Commissioner, Board of Grain Commissioners.
M. J. Conacher, Chief Grain Inspector, Board of Grain Commissioners.
Dr. J. A. Anderson, Chief Chemist, Grain Research Laboratory.
D. E. Ross, Chairman, Grain Appeal Tribunal, Winnipeg.
J. L. A. Doray, Chairman, Grain Appeal Tribunal, Calgary.
Dr. A. E. Hannah, Dominion Cerealists.
L. A. McCorquodale, representing the millers of wheat flour.

George Bennett	}	Representing grain growers in Alberta.
R. J. Graham		
B. S. Plumer		
K. Anderson		

J. H. Harrison	}	Representing grain growers in Saskatchewan.
A. P. Gleave		
J. Wellbelove		
L. L. Gray		
N. W. Strelloff		

W. J. Parker	}	Representing grain growers in Manitoba.
P. A. McPhail		
Ray Mitchell		

G. Constable, representing grain growers in British Columbia.
L. Bell, representing Plant Products Division, Department of Agriculture.

Committee on Eastern Grain Standards as at December 31, 1961

G. N. McConnell, Chief Commissioner, Board of Grain Commissioners.
S. Loptson, Commissioner, Board of Grain Commissioners.
A. V. Svoboda, Commissioner, Board of Grain Commissioners.
M. J. Conacher, Chief Grain Inspector, Board of Grain Commissioners.
W. G. Thomson, representing Montreal Board of Trade.
E. D. Sullivan, representing Toronto Board of Trade.
C. Gordon McAuley, representing exporters of grain

F. H. Dunsford	}	Representing millers of wheat in the Eastern Division.
C. L. Rogers		

J. R. Heaney	}	Representing grain growers in Ontario.
A. McLean		

G. C. Nichols, representing growers of corn
P. Blouin, Additional.
A. Bowman, Additional.

APPENDIX B

Grain Appeal Tribunals

Winnipeg	Calgary	Edmonton
D. E. Ross (Chairman)	J. L. A. Doray (Chairman)	(Discontinued November 1, 1961)
J. E. G. Hasell	G. R. Deeton	A. M. Creighton (Chairman)
J. F. Lazenby	B. T. Jenkins	H. A. Haggarty
Wm. E. McLeod	W. F. Fennell	D. G. MacKeracher
G. I. Rocan	A. E. Longhurst	C. E. Sage
E. A. Sangster	W. G. McLeod	J. F. Schofield
R. C. Sproule	W. M. Pringle	T. Stickney
V. J. Stubbs	J. Tranter	N. Topolnitsky
G. A. Turner	J. D. Toomer	M. G. Wood
N. Kawka (Secretary)		C. C. Young

Toronto	Montreal
C. H. Coatsworth	M. M. Ainslie (Chairman)
J. Elder	P. Blouin
C. W. Heimbecker	S. Brooks
J. Jervis	J. A. Byrne
R. C. Pratt	E. B. Paterson
E. D. Sullivan	R. Strauss
A. L. Walker	Mrs. Muriel B. Hunter (Secretary)
D. C. Kay, Jr. (Secretary)	

For information on Appeals of Carlot Inspections refer to Appendix D, Table D-6.

APPENDIX C

Statistics Branch

E. E. BAXTER, *Chief Statistician*

(A) STATISTICS

The Statistics Branch receives reports from all elevators licensed under the Canada Grain Act and from these returns compiles and publishes basic statistics relating to the storage and handling of grain within the Canadian elevator system. It prepares audit statements of the operations of all terminal and eastern elevators, verifies the insurance carried on grain stocks and handles the record details relating to the amounts collected as the 1% levy under the Prairie Farm Assistance Act. It supplies for review by the Board a detailed analysis of all grain handlings and co-operates with other Board offices in the maintenance of detailed records of principal operations.

(B) LICENSING

The Canada Grain Act provides that no railway company or vessel shall receive any western grain from any elevator or discharge any such grain into any elevator unless such elevator is licensed by the Board. The Act also specifies the conditions by which grain dealers, track buyers or grain commission merchants must be licensed in order to engage in contracts dealing with western grain by grade name. Such elevator and dealers' licences are issued by the Board through the licensing division of the Statistics Branch. This office also supervises the implementation of Section 79-3 by which all such licensees must be secured by bond or otherwise for the performance of all obligations imposed upon them by the Act.

(C) REGISTRATION

Section 127 of the Canada Grain Act requires the operators or managers of public terminal, semi-public terminal and eastern elevators to issue warehouse receipts or transfer receipts for all grain taken into store. Regulations No. 1 and No. 2, made by the Board under the provisions of Section 15 (22) of the Canada Grain Act, require that all such warehouse receipts or transfer receipts be registered with the Board as to grade and quantity at the time of issue, and that these warehouse receipts or transfer receipts be surrendered to the Board for registration for cancellation when the grain which they represent has been shipped out.

Introductory Comment

The integration of statistical, audit, and registration records and procedures was further developed in 1960-61 following the amalgamation of the former Registration Branch as part of the Statistics Branch. Further adaptations to electronic data processing equipment were developed and in discussion with special representatives of the Royal Commission on Government Organization consideration was given to joint action with parallel officers of the Canadian Wheat Board. Initial steps were taken towards the provision of improved statistical and licensing information services through the branch offices in Vancouver and Montreal.

The office collaborated with the parallel divisions of the Canadian Wheat Board with respect to statistics, licensing and registration. The Branch also continued to work in close liaison with the Agriculture Division of the Dominion Bureau of Statistics and the Grain Division of the Department of Agriculture in the supply of grain statistics and other information and service related to the Canadian elevator system.

Staff changes during the year included the resignation of Mr. A. Kubicek, Research Statistician, to accept a post with the Technical Service and Market Research Branch of the Canadian Wheat Board, his replacement by Mr. H. Swalwell (Bachelor of Commerce, University of Saskatchewan) and the transfer of Mr. F. Malo (Supervisory Clerk, Winnipeg) to assume charge of the Branch's Vancouver office as Deputy Registrar.

(A) Statistics

The demand for regular and special statistical bulletins and reviews continued at a high level. The integration of licence and registration records made possible the elimination of certain returns previously required from the grain companies and at the same time permitted further improvement of the statistical coverage of Canadian grain storage and handling operations. Of special note were additional and extended studies prepared for the information of the Chief Weighmaster and Chief Inspector to facilitate their operational controls. The office continued the co-operative arrangement with the Grain Research Laboratory, the Personnel Division and the accounts office whereby the Electronic Data Processing unit provided full service to these other Board Branches in their statistical, accounting and records operation.

The senior officers continued to meet with grain trade and other officials at periodic intervals as part of our policy of progressive modification and improvement of all statistical bulletins in order that these releases properly reflect changing circumstances within Canada's grain industry. Co-operative exchange of statistics was maintained with corresponding units of the United States Department of Agriculture, The Food and Agriculture Organization in Rome and the Commonwealth Economic Committee in London.

The responsibility of the office under provisions of the Inland Water Freight Rates Act was met by the careful scrutiny of vessel charter confirmations covering all lake grain cargoes shipped from Fort William-Port Arthur during the 1961 season. These examinations involved charter confirmations covering 741 individual inland cargoes clearing the Lakehead for Eastern Canadian ports in vessels of Canadian and Commonwealth registry from the beginning of the 1961 season on April 9th to the final loading on December 16th. Summary statements of the average rates prevailing on these cargoes were published for the information of the grain trade.

The records and statements prepared in connection with the grain audits at terminal and eastern elevators under provision of Sections 139 and 140 of the Canada Grain Act, are summarized in Tables C-12 to C-14 inclusive of this appendix. Audit examination was conducted in connection with the weigh-over of 1,434 public country elevators. Detailed studies and supplementary reports were prepared in connection with both the terminal and country elevator audits to assist the Board in its review of these audits and to guide the Inspection and Weighing Branches in their operational control work.

Under provisions of Section 11 of the Prairie Farm Assistance Act, the Board continued to collect the one per cent levy on grain purchased by licensees under the Canada Grain Act. During the crop year 1960-61 the amount collected was \$6,941,094.41, an increase of \$614,170.41 from collections

recorded during the previous crop year. Collections by the Board since the inception of the Act to July 31, 1961, total \$127,253,208.50.

In accordance with the Federal-Provincial arrangements respecting the Provincial Crop Insurance programs, grain otherwise subject to the provisions of Section 11 but produced on land covered by the Manitoba Crop Insurance program, was exempted from the one per cent levy. The levy collection system was modified accordingly through meetings with Provincial and grain company officials. It is estimated that this exemption involved the delivery of approximately \$4.5 millions worth of grain from insured producers during the 1960-61 season. This arrangement has been repeated for the 1961-62 season in Manitoba and extended to apply in the Province of Saskatchewan with respect to that province's crop insurance program for 1961-62.

Special control checks were developed to meet the problems created by the above exemption. These controls were tested with respect to the initial year of operation of the Manitoba program and modified to meet the Saskatchewan procedures for 1961-62.

(B) Licensing

At December 1, 1960, the close of the initial licensing period of the crop year 1960-61, 5,448 licences were in force, issued to 89 firms and individuals. Included in these were 45 licences granted to Track Buyers, Commission Merchants and Grain Dealers. In addition, country elevator licensees were authorized to use 136 off-site grain storage buildings of various types.

Country elevator licences issued for the 1960-61 season were based upon the elevator capacity figures established by the special review and assessment of physical capacities carried out during 1959-60.

In the course of the crop year, 40 licences were cancelled, by reason that two elevators were destroyed by fire, 13 were demolished or wrecked, one was disposed of, 14 were converted to annexes, and 10 applications were withdrawn at company request.

Nineteen country elevator licences were suspended during the crop year 1960-61, either during renovation and reconstruction of building or, in the case of destruction by fire, the erection of a new elevator on the site. Thirteen were reinstated during the crop season and six were still under suspension at the end of the crop year. Application for renewal was made for all of these latter six licences.

Guarantee bonds in the amount of \$30,480,135.00, executed by 14 approved surety companies, were deposited with the Board as security under Section 79 of the Canada Grain Act to cover operations of licensees during 1960-61. Negotiable Government bonds in the amount of \$1,000.00 were held in lieu of the usual form of surety bond.

As at July 31, 1961, with 5,375 elevator licences and 96 grain storage building authorities in force, the licensed storage capacity was 644,703,810 bushels in elevators and 4,604,900 bushels in grain storage buildings, an increase in total licensed storage of 10,254,100 bushels since July 31, 1960. The total licensed storage capacities by provinces are: Manitoba 61.7; Saskatchewan 211.9; Alberta 137.0; British Columbia 27.0; Ontario 158.8; Quebec 45.7; and the Maritimes 7.2 million bushels.

The major changes in the composition of this storage were increases of 8.4 million bushels at public country elevators and 4.5 millions at semi-public

terminals, while reductions of 2.6 millions in grain storage building capacity and 1.0 million bushels at mill elevators were noted. Adjustments also included increases of 0.5 millions and 0.4 millions at eastern elevators and private terminals respectively. The heavier forwarding movement which prevailed during the second half of the 1960-61 season made possible substantial shipments from grain storage buildings. The authorization for the use of these structures was cancelled immediately the storage was emptied; cancellations during the crop year involved 2,565,600 bushels of space.

Pursuant to directions from the Board and as arranged by joint meetings of the Board of Grain Commissioners, the Canadian Wheat Board and elevator company representatives, the Licensing Officer was authorized to grant public country elevator licences to those elevators from which rail service has been withdrawn in the course of the railways' program of branch line abandonment; and as the latter is approved by the Board of Transport Commissioners, the elevators were to be licensed as abandoned elevators for the storage only of that grain held in those elevators at the beginning of the 1961-62 crop year or the official date of abandonment, whichever date should be the later. No such licence was required during the 1960-61 licence year, but effective August 1, 1961, some 25 such licences were issued to country elevators.

(C) Registration

During the Crop Year 1960-61, registration service was provided for licensees of 40 semi-public terminal elevators and 32 Eastern elevators, at offices provided by the Board for this purpose at Montreal, Winnipeg and Vancouver.

While the volume of warehouse receipt registrations to total bushels handled, was down considerably when compared to that of the previous crop year, due to the drier condition of the current year's crop, the overall handlings for the Western Division show increases of 9.4 million bushels and 6.9 million bushels, respectively, for receipts and shipments, as compared to those of the ten-year average. A large increase was recorded for the Pacific coast group of elevators as compared to the ten-year average, showing gains of 40.4 million bushels and 38.4 million bushels, respectively for primary registrations and cancellations, due principally to the increased movement of grain through that sector resulting from the sale of grain to Communist China.

Despite a heavier grain movement through the Eastern Division, total registrations and cancellations, including inter-sector transfers were still some 61.3 millions and 60.4 millions respectively below the 10-year average. This was due primarily to the elimination which has taken place during the past several years of a major portion of the transfer movement, as much of the export grain now moves on a direct basis from the Lakehead to St. Lawrence export ports.

Steps were taken during the year under review to provide for machine tabulation of the statistical data as related to warehouse receipt registrations, for the Lakehead and Interior group of elevators. Records were maintained for semi-public terminal licensees, and for Eastern elevator licensees, by grain and grade, to show total quantities registered, cancelled and outstanding each day, with a breakdown of this data to provide a crosscheck to the handling records provided by machine tabulation. A separate series of records were maintained for licensees in both Divisions, by grain, to provide a complete registration and cancellation record for all warehouse receipts and transfer receipts that were issued and registered with the Board. A careful

scrutiny of grade adjustments, as reported daily by licensees in the Western Division, was carried out to see that the non-mixing provisions of the Canada Grain Act were being complied with. Certified statements of outstanding warehouse receipt grade totals, together with the totals of handlings for the non-mixing grades of wheat and other relevant information, were supplied as required for use in summarizing the results of the annual weighover of stocks of grain, as carried out by Board officials, at terminal and Eastern elevators.

Licensees, in the Western Division particularly, are constantly faced with the problem of providing warehouse receipts, for exact grades and quantities, to cover sales of grain, grade adjustments, shipments of grain, adjustment of storage, etc., and to this end, registration service was also provided for the consolidation, re-issue or splitting of warehouse receipts as required.

Fees for registration service were charged at the rate of, 4 cents a thousand bushels for registration and for registration for cancellation in the Western Division, and 1 cent a thousand bushels for similar types of service in the Eastern Division. Total fees collected for the period under review amounted to \$49,710.12 compared with \$44,942.56 in 1959-60. That this total is still short of the 10-year average (\$50,273.45) reflects the elimination of a major portion of the Eastern transfer movement and the absence of any substantial drying operations in 1960-61.

General

Summary grain statistics with respect to the 1960-61 crop year and the 1961 season of navigation are presented in table form following this section. Complete details are published in the various regular and periodical bulletins of the Branch, in the Branch's export release, "Canadian Grain Exports 1960-61", and in the "Grain Trade of Canada" issued jointly by this office and the Agriculture Division of the Dominion Bureau of Statistics. Details of licences issued under the Canada Grain Act are carried in the publication "Grain Elevators in Canada". Table C-19 of this Appendix presents the total bushels by grains, for which warehouse receipts or transfer receipts were registered and/or registered for cancellation at offices of the Board maintained for this purpose at Montreal, Winnipeg and Vancouver.

Table C-1.—Supply and Disposition of Canadian Grain, Crop Year 1960-61

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
SUPPLY					
Carry-over July 31st, 1960.....	537,588,136	92,827,492	121,469,650	6,753,391	4,874,392
Production in 1960.....	489,624,000	456,134,000	207,036,000	10,125,000	23,020,000
Total Supply.....	1,027,212,136	548,961,492	328,505,650	16,878,391	27,894,392
DISPOSITION					
Exported Overseas.....	344,303,886	1,106,729	29,486,441	1,016,593	13,603,333
Exported to U.S.A.....	2,518,758	812,037	12,046,401	1,595,024	—
Consumed in Canada.....	153,548,825	451,888,986	179,415,548	6,849,767	6,711,258
Total Disposition.....	500,371,469	453,807,752	220,948,390	9,461,384	20,314,591
CARRY-OVER (July 31st, 1961)					
On Farms (Estimated).....	89,450,000	73,700,000	55,100,000	2,600,000	1,410,000
In Country, Private Terminal and Mill Elevators.....	252,077,301	12,206,961	31,563,686	2,032,946	1,326,767
In Semi-Public Terminal Elevators.....	82,514,734	3,428,690	11,935,501	2,240,840	3,689,703
In Store at and Afloat to Eastern Elevators.....	78,340,532	4,164,038	6,074,431	215,509	553,170
In Eastern Flour Mills.....	1,794,494	299,860	500	—	—
In Transit by Rail—Eastern and Western Divisions.....	22,663,606	1,354,191	2,588,515	327,712	600,161
In Store and in Transit to the United States.....	—	—	294,627	—	—
Total in Store July 31st, 1961..	526,840,667	95,153,740	107,557,260	7,417,007	7,579,801

**Table C-2.—Production and Producers' Marketings in Western Canada,
by Provinces, Crop Year 1960-61**

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
PRODUCTION (DBS Estimate)					
Manitoba.....	62,000,000	68,000,000	28,000,000	1,700,000	6,400,000
Saskatchewan.....	308,000,000	126,000,000	73,000,000	4,500,000	10,750,000
Alberta and British Columbia.....	101,250,000	113,900,000	101,700,000	1,785,000	5,677,000
Totals.....	471,250,000	307,900,000	202,700,000	7,985,000	22,827,000
PRODUCERS' MARKETINGS					
(a) At Country Elevators					
Manitoba.....	46,748,773	10,558,605	15,176,783	1,329,399	5,045,364
Saskatchewan.....	256,903,835	13,885,492	36,623,075	2,977,697	8,398,685
Alberta.....	88,351,361	12,500,832	35,781,622	1,497,908	4,332,606
Totals.....	392,003,969	36,944,929	87,581,480	5,805,004	17,776,655
(b) At Interior Semi-Public Terminals					
Manitoba.....	50,264	49,555	15,165	—	—
Saskatchewan.....	—	—	—	—	—
Alberta.....	66,674	42,381	27,189	—	—
Totals.....	116,938	91,936	42,354	—	—
(c) At Interior Private and Mill Elevators					
Manitoba.....	590,011	128,572	66,150	30	92,046
Saskatchewan.....	2,420,106	174,494	54,170	282	136,337
Alberta.....	1,012,573	261,987	111,671	16,417	94,178
Totals.....	4,022,690	565,053	231,991	16,729	322,561
(d) Loaded over Platforms					
Manitoba.....	4,475	32,186	2,596	2,375	6,681
Saskatchewan.....	51,956	—	1,161	—	5,052
Alberta.....	11,567	—	38,001	—	24,909
Totals.....	67,998	32,186	41,758	2,375	36,642
Total Producers' Marketings					
Manitoba.....	47,393,523	10,768,918	15,260,694	1,331,804	5,144,091
Saskatchewan.....	259,375,897	14,059,986	36,678,406	2,977,979	8,540,074
Alberta.....	89,442,175	12,805,200	35,958,483	1,514,325	4,451,693
Totals.....	396,211,595	37,634,104	87,897,583	5,824,108	18,135,858

Table C-3.—Receipts and Shipments of Canadian Grain at Terminal Elevators, Crop Year 1960-61

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
Fort William-Port Arthur—					
Receipts.....	215,057,919	33,828,425	63,396,754	4,156,048	9,507,160
Shipments.....	217,207,658	32,767,389	59,293,666	2,444,015	8,058,648
Vancouver-New Westminster—					
Receipts.....	120,704,258	353,163	16,434,719	1,119,286	7,783,479
Shipments.....	119,114,141	967,603	16,987,880	1,012,202	7,073,064
Victoria—					
Receipts.....	5,478,750	740	1,552	—	248,663
Shipments.....	5,481,568	58,735	6,583	—	248,325
Prince Rupert—					
Receipts.....	—	—	9,889,418	—	—
Shipments.....	—	—	10,398,173	—	—
Churchill—					
Receipts.....	19,465,470	382	—	—	—
Shipments.....	20,096,951	108,376	—	—	—
Transcona—					
Receipts.....	86,768	63,537	17,031	2,093	2,029
Shipments.....	66,233	51,705	27,122	2,093	2,020
Calgary—					
Receipts.....	395,461	—	1,676,048	2,160	—
Shipments.....	440,174	7,656	1,348,851	2,160	—
Edmonton—					
Receipts.....	562,996	63,584	44,753	—	51,005
Shipments.....	743,650	94,640	57,084	—	50,702
Lethbridge—					
Receipts.....	200,553	—	—	—	—
Shipments.....	508,292	2,335	—	—	—
Moose Jaw—					
Receipts.....	1,369,934	—	—	—	—
Shipments.....	1,625,226	—	—	—	—
Saskatoon—					
Receipts.....	1,273,697	—	1,827	1,058	55,447
Shipments.....	1,462,410	144,380	1,827	1,009	55,447
Total Receipts.....	364,595,806	34,309,831	91,462,102	5,280,645	17,647,783
Total Shipments.....	366,746,303	34,202,819	88,121,186	3,461,479	15,488,206

Table C-4.—Shipments of Foreign Grain From Canadian Elevators into Canadian Consumer Channels, Crop Year 1960-61

From	United States Flaxseed	United States Corn	United States Soybeans	South African Corn	United States Sorghums
	bu.	bu.	bu.	bu.	bu.
Eastern Elevators.....	—	12,632,692	2,041,841	—	326,877
Fort William-Port Arthur.....	—	—	—	—	—
Interior Terminals.....	—	—	—	—	—
Interior Private and Mill Elevators.....	—	669,704	—	—	—
Pacific Coast Elevators.....	—	—	—	—	—

Table C-5.—Primary Receipts and Shipments at Eastern Elevators, Crop Year 1960-61

	Receipts	Shipments
CANADIAN GRAIN	bu.	bu.
Wheat.....	204,325,455	207,596,116
Oats.....	31,049,623	29,148,794
Barley.....	32,616,101	29,763,348
Rye.....	1,252,198	1,147,318
Flaxseed.....	5,709,252	5,765,333
Corn.....	1,577,954	1,859,840
Buckwheat.....	34,193	26,834
Soybeans.....	2,562,038	2,723,560
Peas.....	96,012	99,732
Rapeseed (lbs.).....	10,623,790	10,647,960
Mixed Grain (lbs.).....	—	630,000
Sample Grain (lbs.).....	15,972,376	10,518,300
UNITED STATES GRAIN		
Wheat.....	12,529,024	12,141,589
Barley.....	1,574,259	1,610,996
Rye.....	251,284	251,284
Flaxseed.....	1,276,565	1,318,880
Corn.....	29,552,693	26,849,482
Soybeans.....	10,855,912	10,636,253
Sorghums.....	327,471	326,877

Table C-6.—Supply and Disposition of Canadian Grain in United States Positions, Crop Year 1960-61

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
SUPPLY					
In Store and in Transit U.S.A.....	—	—	—	152,000	—
Receipts direct from Canada.....	3,330,471	812,037	12,046,401	1,443,024	—
Total Supply.....	3,330,471	812,037	12,046,401	1,595,024	—
DISPOSITION					
Exported.....	—	—	—	—	—
Returned to Canada.....	811,713	—	—	—	—
Used Domestically.....	2,518,758	812,037	12,046,401	1,595,024	—
Total Disposition.....	3,330,471	812,037	12,046,401	1,595,024	—
In Store and in Transit July 31, 1961	—	—	—	—	—

Table C-7.—Exports of Canadian Wheat, by Seaboard Sectors, by Months, Crop Year 1960-61

	Via Canadian Pacific Ports	Via Canadian St. Lawrence- Atlantic Ports	Via Churchill	Via Fort- William- Port Arthur Direct	Via United States Atlantic Ports	United States Imports ¹	Total All Wheat	Wheat Flour ²	Total Wheat and Wheat Flour
	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.
1960									
August.....	7,753,710	5,280,454	9,093,583	1,698,885	—	81,000	23,907,632	2,795,484	26,703,116
September.....	8,458,629	8,854,708	7,689,293	1,591,920	—	147,424	26,741,974	2,732,481	29,474,455
October.....	7,614,681	9,080,323	2,258,281	1,821,995	—	396,304	21,171,784	2,447,809	23,619,593
November.....	4,938,089	17,226,849	—	748,214	—	310,596	23,223,748	4,440,781	27,664,529
December.....	10,432,014	9,633,598	—	—	—	156,474	20,222,086	3,123,853	23,345,939
1961									
January.....	9,409,639	6,872,236	—	—	—	126,300	16,408,175	3,592,271	20,000,446
February.....	11,084,533	9,424,826	—	—	—	7,500	20,516,859	2,600,060	23,116,919
March.....	11,135,961	12,235,364	—	—	—	6,000	23,377,325	2,651,472	26,028,797
April.....	12,683,703	18,227,038	—	473,888	—	10,500	31,395,129	3,344,876	34,740,005
May.....	14,203,110	24,105,137	—	2,817,087	—	1,064,904	42,190,238	2,836,077	45,026,315
June.....	15,797,918	18,428,346	—	1,127,913	—	177,570	35,531,747	2,636,449	38,168,196
July.....	10,675,016	13,770,219	1,053,733	732,131	—	34,186	26,265,285	2,669,049	28,934,334
Total Crop Year 1960-61.....	124,187,003	153,139,298	20,094,890	11,012,033	—	2,518,758	310,951,982	35,870,662	346,822,644
Total Crop Year 1959-60.....	95,067,993	108,400,721	21,700,045	7,323,720	136,788	2,087,750	234,717,017	36,969,954³	271,686,971
5-Year Average 1955-56 to 1959-60.....	106,744,876	119,934,037	17,514,716	2,493,006	168,832	5,145,179	252,000,646	37,603,057	289,603,703

¹ Compiled from returns of Canadian elevator licensees and shippers and advice from American grain correspondents.

² Canadian Customs returns converted to bushels—unadjusted for time lag.

³ Revised—adjusted to remove effect of time lag in reports made by the Customs.

**Table C-8.—Overseas Exports of Canadian Grain, by Seaboard Sectors,
by Grades, Crop Year 1960-61**

Grades	Via Canadian Pacific Ports	Via Canadian St. Lawrence- Atlantic ¹ Ports	Via Churchill	Via Ft. William- Port Arthur direct	Via United States Atlantic Ports	Total
	bu.	bu.	bu.	bu.	bu.	bu.
WHEAT—						
1 Manitoba Northern.....	544,445	2,746,794	225,867	182,441	—	3,699,547
2 Manitoba Northern.....	37,222,146	52,319,093	10,495,978	5,358,912	—	105,396,129
3 Manitoba Northern.....	53,143,983	43,819,376	7,547,854	2,716,189	—	107,227,402
4 Manitoba Northern.....	14,607,103	10,031,657	1,629,992	924,280	—	27,193,032
No. 5.....	16,877,161	513,216	40,581	—	—	17,430,958
No. 6.....	196,000	—	—	—	—	196,000
Other Red Spring Wheat.....	1,329,210	2,530,648	154,618	780,756	—	4,795,232
Garnet.....	36,422	—	—	—	—	36,422
Alberta Winter.....	230,533	—	—	—	—	230,533
Eastern.....	—	1,037,420	—	—	—	1,037,420
2 C.W. Amber Durum.....	—	23,733,812	—	704,387	—	24,438,199
3 C.W. Amber Durum.....	—	8,452,621	—	175,201	—	8,627,822
Ex. 4 C.W. Amber Durum.....	—	5,206,961	—	—	—	5,206,961
4 C.W. Amber Durum.....	—	1,897,210	—	74,667	—	1,971,877
Other C.W. Amber Durum.....	—	850,490	—	95,200	—	945,690
Totals.....	124,187,003	153,139,298	20,094,890	11,012,033	—	308,433,224
OATS—						
3 C.W.....	—	186,710	—	—	—	186,710
Ex. 1 Feed.....	120,235	130,734	—	20,753	—	271,722
1 Feed.....	5,882	—	—	—	—	5,882
Mixed Feed.....	83,012	—	108,376	65,883	—	257,271
Eastern.....	—	385,144	—	—	—	385,144
Totals.....	209,129	702,588	108,376	86,636	—	1,106,729
BARLEY—						
3 C.W. Six Row.....	2,409,794	95,117	—	825,450	—	3,330,361
4 C.W. Six Row.....	231,958	—	—	—	—	231,958
3 C.W. Two Row.....	256,067	—	—	—	—	256,067
1 Feed.....	22,478,879	52,837	—	—	—	22,531,716
2 Feed.....	1,626,145	12,159	—	1,101,535	—	2,739,839
Other Western.....	—	—	—	396,500	—	396,500
Totals.....	27,002,843	160,113	—	2,323,485	—	29,486,441
RYE—						
2 C.W.....	975,324	20,600	—	—	—	995,924
3 C.W.....	20,669	—	—	—	—	20,669
Totals.....	995,993	20,600	—	—	—	1,016,593
FLAXSEED—						
1 C.W.....	7,320,520	3,020,996	—	2,746,632	—	13,088,148
2 C.W.....	57,200	232,319	—	61,448	—	350,967
3 C.W.....	40,590	113,148	—	10,480	—	164,218
Totals.....	7,418,310	3,366,463	—	2,818,560	—	13,603,333

¹ Includes clearances of wheat and flaxseed direct overseas from Kingston and Toronto, respectively.

Table C-9.—Overseas Exports of Canadian Grain, by Ports, Crop Year 1960-61

Loaded at	Wheat (All varieties)	Oats	Barley	Rye	Flaxseed	Total All Grains
	bu.	bu.	bu.	bu.	bu.	bu.
Vancouver-New Westminster.....	118,720,154	153,129	16,604,670	995,993	7,168,417	143,642,363
Victoria.....	5,466,849	56,000	—	—	249,893	5,772,742
Prince Rupert.....	—	—	10,398,173	—	—	10,398,173
Churchill.....	20,094,890	108,376	—	—	—	20,203,266
Fort William-Port Arthur direct.....	11,012,033	86,636	2,323,485	—	2,818,560	16,240,714
Toronto.....	—	—	—	—	32,377	32,377
Kingston.....	149,571	—	—	—	—	149,571
Montreal.....	62,576,141	702,588	88,601	20,600	2,981,178	66,369,108
Sorel.....	18,193,580	—	—	—	—	18,193,580
Three Rivers.....	14,057,138	—	—	—	—	14,057,138
Quebec.....	6,653,711	—	—	—	—	6,653,711
Baie Comeau.....	17,963,238	—	—	—	—	17,963,238
Saint John.....	2,552,853	—	—	—	—	2,552,853
West Saint John.....	16,499,436	—	71,512	—	332,911	16,903,859
Halifax.....	14,493,630	—	—	—	19,997	14,513,627
Totals—Canadian Ports	308,433,224	1,106,729	29,486,441	1,016,593	13,603,333	353,646,320
U.S.A. Ports.....	—	—	—	—	—	—
Totals to Overseas.....	308,433,224	1,106,729	29,486,441	1,016,593	13,603,333	353,646,320
Wheat Flour ¹	35,870,662	—	—	—	—	35,870,662
U.S.A. Imports ²	2,518,758	812,037	12,046,401	1,595,024	—	16,972,220
Grand Totals	346,822,644	1,918,766	41,532,842	2,611,617	13,603,333	406,489,202

¹ Canadian Customs Returns—converted to bushels.

² Compiled from returns of Canadian Elevator licensees and shippers and advice from American grain correspondents.

Table C-10.—Tough and Damp Grain Dried, by Storage Position, Crop Year 1960-61

	Artificial Drying			Natural Drying	Total
	Tough	Damp	Tough and Damp		
	bu.	bu.	bu.	bu.	bu.
LAKEHEAD					
Wheat.....	667,061	53,083	720,144	5,635,227	6,355,371
Durum.....	28,727	—	28,727	66,706	95,433
Oats.....	75,427	6,725	82,152	1,060,459	1,142,611
Barley.....	29,346	9,720	39,066	1,932,086	1,971,152
Rye.....	3,993	1,553	5,546	31,736	37,282
Flaxseed.....	24,758	3,476	28,234	205,903	234,137
Totals.....	829,312	74,557	903,869	8,932,117	9,835,986
PACIFIC COAST					
Wheat.....	8,438,357	14,165	8,452,522	3,068,138	11,520,660
Oats.....	—	—	—	8,073	8,073
Barley.....	373,016	2,043	375,059	1,973,774	2,348,833
Rye.....	3,690	—	3,690	26,270	29,960
Flaxseed.....	1,302	—	1,302	136,936	138,238
Totals.....	8,816,365	16,208	8,832,573	5,213,191	14,045,764
INTERIOR					
Wheat.....	451,963	5,447	457,410	—	457,410
Oats.....	—	—	—	—	—
Barley.....	616	—	616	—	616
Rye.....	1,058	—	1,058	—	1,058
Flaxseed.....	12,785	—	12,785	—	12,785
Totals.....	466,422	5,447	471,869	—	471,869
CHURCHILL					
Wheat.....	—	—	—	817,337	817,337
Totals, All Positions.....	10,112,099	96,212	10,208,311	14,962,645	25,170,956

**Table C-11.—Weighted Average Lake Freight Rates on Canadian Grain from
Fort William-Port Arthur, Season of Navigation 1961**

Port of Discharge	Wheat	Oats	Barley	Rye	Flaxseed
	(cents per bushel)				
Georgian Bay Ports, Goderich, Sarnia and Walkerville.....	5.062	4.598	4.957	5.462	—
Port Colborne.....	6.504	6.096	6.492	—	—
Toronto.....	7.155	6.5	7.233	7.0	7.6
Kingston.....	—	7.0	7.25	—	—
Prescott.....	8.012	7.297	7.526	8.0	—
Montreal (Direct).....	13.021	10.082	12.307	13.023	14.0
Montreal via Port Colborne.....	14.0	—	12.25	—	—
Montreal via Toronto.....	14.0	—	—	—	—
Montreal via Kingston.....	14.109	10.0	12.25	—	14.0
Montreal via Prescott.....	14.0	—	12.25	—	—
Sorel (Direct).....	13.0	—	—	12.0	—
Sorel via Port Colborne.....	14.103	—	—	12.0	—
Sorel via Prescott.....	14.0	—	—	—	—
Three Rivers (Direct).....	13.0	10.0	12.25	—	—
Three Rivers via Port Colborne.....	14.0	—	—	—	—
Three Rivers via Toronto.....	14.0	—	—	—	—
Quebec (Direct).....	13.003	10.018	12.253	13.0	—
Quebec via Prescott.....	14.0	—	12.25	—	—
Baie Comeau (Direct).....	13.0	—	—	—	—
Halifax (Direct).....	16.536	13.0	16.0	—	—
Other Maritime Ports.....	30.395	20.0	25.0	—	—
Buffalo.....	8.0	—	7.879	7.439	—
Chicago.....	7.478	—	6.678	6.376	—
Duluth-Superior.....	5.915	—	6.183	—	—
Manitowoc.....	—	—	6.0	—	—
Milwaukee.....	—	—	6.136	—	—
Oswego.....	—	—	9.0	—	—

Note—Rates originally quoted in United States Funds have been converted to Canadian currency at the prevailing rates of exchange.

Table C-12.—Excesses and Deficiencies in Specified Grades of Wheat Disclosed by Weighovers of Grain Stored in SEMI-PUBLIC TERMINAL Elevators, Crop Year 1960-61

Date of Weighover	Licensee	EXCESS					DEFICIENCY					
		No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 2 Canada Western Garnet
		bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.
Dec. 12-19, 1960.....	FORT WILLIAM-PORT ARTHUR Eastern Terminal Elevator Co. Ltd.....	—	—	16,942.0	487.6	—	—	20,006.0	—	—	—	—
Dec. 12-21, 1960.....	Federal Grain Ltd.	—	—	—	—	—	—	224.9	4,166.0	12,392.0	—	—
Dec. 15-27, 1960.....	Northwestern Elevator..... Stewart Elevator.....	—	—	—	—	—	—	1,953.9	6,570.7	13,653.6	—	—
June 26-29, 1961.....	The Fort William Elevator Co. Ltd. Elevator "F".....	—	—	—	—	—	—	2.8	117.4	50.1	—	—
Dec. 14-20, 1960.....	McCabe Grain Co. Ltd.....	—	—	—	—	—	—	81.7	3,351.4	6,854.1	—	—
Dec. 15-29, 1960.....	National Grain Co. Ltd.....	—	—	—	—	—	—	212.1	6,083.9	30,894.0	—	—
May 2-8, 1961.....	N. M. Paterson & Sons Ltd.....	—	—	—	—	—	—	790.0	63,714.6	18,172.3	—	—
Nov. 9-18, 1960.....	Saskatchewan Wheat Pool Elevator No. 6.....	—	—	—	—	—	—	890.1	26,870.3	90,158.7	—	—
Dec. 19-30, 1960.....	Elevator No. 7.....	—	—	—	—	—	—	2,610.4	48,251.4	7,251.7	—	—
Oct. 31-Nov. 7, 1960.....	Elevator No. 8.....	—	—	—	—	—	—	211.9	1,506.3	2,003.9	—	—
Dec. 7-13, 1960.....	Superior Elevator Co. Ltd.....	—	—	44,929.4	—	—	—	1,805.1	—	45,446.1	—	—
Dec. 20-29, 1960.....	United Grain Growers Ltd. Elevator "A".....	—	—	1,490.4	—	—	—	119.5	—	5,445.6	—	—
Dec. 27, 1960- Jan. 27, 1961.....	Westland Elevators Ltd.....	—	—	—	—	—	—	74,966.0	26,253.4	96,844.1	—	—

Table C-12.—Excesses and Deficiencies in Specified Grades of Wheat Disclosed by Weighovers of Grain Stored in SEMI-PUBLIC
TERMINAL Elevators, Crop Year 1960-61—Continued

Date of Weighover	Licensee	EXCESS					DEFICIENCY				
		No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 2 Canada Western Garnet	No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern
	VICTORIA, B.C.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.
Aug. 3-5, 1960.....	Victoria Elevator Ltd.	—	—	—	—	—	—	—	—	—	—
June 15-19, 1961.....	Victoria Elevator Ltd.	—	—	—	11,637.2	—	—	—	138.0	1,510.7 9,006.4	477.6
	CALGARY, ALTA.										
Feb. 16-Mar. 6, 1961.....	Canadian Government Elevator	—	—	452.1	12.3	—	—	—	7.5	—	—
	EDMONTON, ALTA.										
Mar. 9-17, 1961.....	Canadian Government Elevator	—	—	—	213.5	—	—	—	89.7	498.4	—
	LETHBRIDGE, ALTA.										
Feb. 6-15, 1961.....	Canadian Government Elevator	—	—	62.8	—	—	—	—	4.9	—	46.2
	MOOSE JAW, SASK.										
Feb. 1-Mar. 13, 1961.....	Canadian Government Elevator	—	—	—	2,728.8	—	—	—	8.7	5,081.3	—
	SASKATOON, SASK.										
Feb. 1-Mar. 9, 1961.....	Canadian Government Elevator	—	—	—	—	—	—	—	10.5	2,727.0	15,909.0
	CHURCHILL, MAN.										
Oct. 17-25, 1960.....	National Harbours Board	—	5.1	7,856.6	2,714.3	—	—	—	—	—	—

Table C-13.—Excesses and Deficiencies in Specified Grades of Wheat disclosed by Weighovers of Grain Stored in PRIVATE TERMINAL Elevators, Crop Year 1960-61

Date of Audit, December 5, 1960	Winnipeg, Manitoba Canada Malting Co. Ltd.	
	Excess	Deficiency
No. 1 Manitoba Hard.....	bu.	bu.
No. 1 Manitoba Northern.....	—	—
No. 2 Manitoba Northern.....	—	20.2
No. 3 Manitoba Northern.....	—	60.1
No. 1 Canada Western Garnet.....	—	—
No. 2 Canada Western Garnet.....	—	—

No wheat of the above grades was handled or in store in the following elevators:

Date of Weighover	Elevator Company	Location
December 5, 1960.....	Dominion Malting Co. Ltd.....	Transcona, Manitoba
January 16, 1961.....	National Grain Feed Mill.....	Fort William, Ontario

Table C-14.—Overages and Shortages Disclosed by Weighovers of Canada Western and Foreign Grain Stored in Eastern Elevators, Crop Year 1960-61

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1961			bu.	bu.
May 13-14	BAIE COMEAU Cargill Grain Co. Ltd..	Canada Western Wheat.....	—	47,528.0
Feb. 16-23	COLLINGWOOD Collingwood Terminals Ltd.....	Canada Western Wheat.....	—	2,700.8
		Canada Western Oats.....	—	71.4
		Canada Western Barley.....	—	391.4
		Canada Western Sample Grain..	—	*2,553
		Canada Western Screenings.....	—	*1,120
Mar. 1-13	GODERICH Goderich Elevator and Transit Co. Ltd.....	Canada Western Wheat.....	—	3,232.9
		Canada Western Oats.....	3,324.0	—
		Canada Western Barley.....	1,523.1	—
		Canada Western Rye.....	—	26.3
		Canada Western Screenings.....	—	*42,859
Feb. 20-28	Upper Lakes Shipping Ltd.....	Canada Western Wheat.....	—	7,368.6
		Canada Western Oats.....	—	3,517.2
		Canada Western Barley.....	—	2,674.8
		Canada Western Rye.....	—	95.1
		Canada Western Sample Grain..	*97,590	—
		Canada Western Screenings.....	—	*59,126
Feb. 20- Mar. 2	HUMBERSTONE Robin Hood Flour Mills Ltd.....	Canada Western Wheat.....	—	10,136.6
Apr. 27	LAKEFIELD Lakefield Elevator Co.	Canada Western Wheat.....	—	3,013.2
Feb. 24- Mar. 13	MIDLAND Canada Steamship Lines Ltd.....	Canada Western Wheat.....	—	4,618.8
		Canada Western Oats.....	39.4	—
		Canada Western Barley.....	—	466.0
Mar. 13-28	Canadian National Railways.....	Canada Western Wheat.....	—	4,470.9

**Table C-14.—Overages and Shortages Disclosed by Weighovers of Canada Western
and Foreign Grain Stored in Eastern Elevators, Crop Year 1960-61—Continued**

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1961			bu.	bu.
Apr. 4-7	Midland Simcoe Elevator Co. Ltd.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley.....	— — —	2,381.8 645.9 46.3
Mar. 6-10	Renown Investments Ltd.....	Canada Western Wheat.....	—	1,512.1
Feb. 13-21	MONTREAL Dominion Elevator Ltd.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... Canada Western Flaxseed..... Canada Western Sample Grain..... Canada Western Screenings..... U.S.A. Corn.....	— — 363.5 — — — —	1,616.9 630.3 — 21.2 *44,400 * 6,850 361.4
Jan. 19- Feb. 15	National Harbours Board.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... Canada Western Rye..... Canada Western Flaxseed..... Canada Western Buckwheat..... Canada Western Peas..... Canada Western Rapeseed..... Canada Western Mixed Grain..... Canada Western Sample Grain..... Canada Western Screenings..... Sample Canadian Red Spring and U.S.A. Winter Wheat..... U.S.A. Wheat..... U.S.A. Barley..... U.S.A. Rye..... U.S.A. Flaxseed..... U.S.A. Corn..... U.S.A. Soybeans..... U.S.A. Sorghums.....	— — — — — — — — — — *7,260 — — — — — — — — — —	53,648.2 6,396.7 2,817.2 1,278.3 3,150.3 43.5 51.3 *5,040 *6,860 — *35,840 8.6 2,107.8 466.5 129.9 564.6 23,108.6 2,216.4 575.3
Mar. 30- Apr. 6	OWEN SOUND Great Lakes Elevator Co. Ltd.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... Canada Western Sample Grain..... Canada Western Screenings.....	— — — — —	3,682.9 3,173.8 1,484.9 * 2,020 *54,820
Apr. 27	PETERBOROUGH Quaker Oats Co. of Canada Ltd.....	Canada Western Wheat.....	—	646.2
Apr. 6-14	PORT COLBORNE National Harbours Board.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... Canada Western Screenings..... U.S.A. Sorghums.....	— — — — —	8,577.7 420.3 698.8 *1,250 78.1
Mar. 14-30	PORT McNICOLL Canadian Pacific Railway.....	Canada Western Wheat.....	—	4,421.7

Table C-14.—Overages and Shortages Disclosed by Weighovers of Canada Western and Foreign Grain Stored in Eastern Elevators, Crop Year 1960-61—Concluded

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1961			bu.	bu.
Feb. 21-28	PRESMOTT National Harbours Board.....	Canada Western Wheat.....	—	4,143.9
		Canada Western Oats.....	—	2,985.8
		Canada Western Barley.....	—	1,876.8
		Canada Western Flaxseed.....	—	80.9
		Canada Western Sample Grain..	—	*3,070
		Canada Western Screenings.....	—	*7,490
		U.S.A. Wheat.....	—	71.0
		U.S.A. Oats.....	—	88.7
Mar. 2-17	QUEBEC National Harbours Board.....	Canada Western Wheat.....	—	4,550.4
		Canada Western Oats.....	—	2,888.0
		Canada Western Barley.....	—	4,221.6
		Canada Western Sample Grain..	—	*2,520
		Canada Western Screenings.....	—	*9,124
		U.S.A. Wheat.....	—	11.4
		U.S.A. Oats.....	—	91.8
		U.S.A. Rye.....	—	298.0
Apr. 10-16	SARNIA Sarnia Elevator Co. Ltd.....	Canada Western Wheat.....	—	10,906.3
		Canada Western Oats.....	—	1,349.3
		Canada Western Barley.....	—	975.5
		Canada Western Rye.....	—	62.4
		U.S.A. Corn.....	—	626.0
Mar. 15- Apr. 4	TORONTO Toronto Elevators Ltd.....	Canada Western Wheat.....	—	3,538.1
		Canada Western Oats.....	—	76.0
		Canada Western Barley.....	639.5	—
		Canada Western Rye.....	—	21.8
		Canada Western Flaxseed.....	—	474.4
		U.S.A. Soybeans.....	5,463.2	—
		U.S.A. Sorghums.....	83.2	—
Mar. 28- Apr. 4	WALKERVILLE Hiram Walker & Sons Grain Corp. Ltd.....	Canada Western Wheat.....	—	2,627.4
		Canada Western Oats.....	—	57.5
		Canada Western Barley.....	—	—
		Canada Western Rye.....	568.8	—
Mar. 22	SAINT JOHN Canadian National Railways.....	Canada Western Wheat.....	—	2,722.8
May 9	WEST SAINT JOHN Canadian Pacific Railway Elevator "B".....	Canada Western Wheat.....	—	6,361.3
		Canada Western Flaxseed.....	—	223.7
May 8	Canadian Pacific Railway Elevator "H".....	Canada Western Wheat.....	—	9,774.0
		Canada Western Oats.....	—	103.0
		Canada Western Barley.....	—	44.7
		Canada Western Rye.....	—	31.2
		Canada Western Flaxseed.....	—	334.3
		Canada Western Rapeseed.....	—	*1,818
		Canada Western Peas.....	—	32.5
Apr. 12-21	HALIFAX National Harbours Board.....	Canada Western Wheat.....	—	10,835.5
		Canada Western Oats.....	—	2,494.0
		Canada Western Barley.....	—	1,060.7
		Canada Western Rye.....	—	26.1
		Canada Western Flaxseed.....	—	12.5
		U.S.A. Corn.....	—	232.1

* Pounds.

Table C-15.—Amounts Collected and Grain Purchased under the One Per Cent Levy, Prairie Farm Assistance Act, Crop Year 1960-61

Province	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed	Total
	\$	\$	\$	\$	\$	\$	\$
Manitoba.....	617,360.33	56,660.73	119,311.90	9,230.37	121,694.08	6,243.88	930,501.29
Saskatchewan.....	3,531,309.70	77,998.79	285,068.05	25,504.58	250,612.77	76,444.74	4,246,938.63
*Alberta.....	1,244,688.51	69,743.64	267,147.50	12,823.04	140,712.76	28,539.04	1,763,654.49
Totals.....	5,393,358.54	204,403.16	671,527.45	47,557.99	513,019.61	111,227.66	6,941,094.41
*Includes Peace River area in B.C.							
Penalties on late filing of returns							
Total collections Aug. 1, 1960							
to July 31, 1961							
							6,941,094.41

	GRAIN PURCHASES						
	thousands of bushels						
Manitoba.....	47,050	10,429	14,993	1,233	5,171	361	79,237
Saskatchewan.....	257,985	14,305	37,591	3,080	8,773	4,782	326,516
Alberta.....	89,644	12,693	35,763	1,517	4,882	1,745	146,244
Totals.....	394,679	37,427	88,347	5,830	18,826	6,888	551,997

Table C-16.—Licences in Force and Storage Capacity as at July 31st, 1961, and a Year Ago

Kind of Licence	Licences in force July 31		Licensed storage capacity July 31	
	1961	1960	1961	1960
Country Elevators.....	5,272	5,302	bu. 370,358,200	bu. 361,915,800
Supplementary Annexes to Country Elevators.....	*	*	4,604,900	7,170,500
Terminals and Mill Elevators.....	71	79	163,390,310	159,533,010
Eastern Elevators.....	32	32	110,955,300	110,435,300
Track Buyers, Commission Merchants and Grain Dealers.....	38	45	†	†
Totals.....	5,413	5,458	649,308,710	639,054,610

* 96 buildings at July 31, 1961 and 147 buildings at July 31, 1960.

† These licences do not cover grain storage facilities.

Table C-17.—Number and Kind of Licences Issued and Licensed Storage Capacity, as at December 1st each year for the Past Five Years

Kind of Licence	1961	1960	1959	1958	1957
NUMBER OF LICENCES					
Public Country Elevator.....	5,261	5,293	5,304	5,314	5,343
Private Country Elevator.....	6	6	8	8	10
Mill Elevator.....	26	27	34	35	33
Semi-Public Terminal Elevator.....	40	40	40	40	40
Private Terminal Elevator.....	6	5	5	5	5
Eastern Elevator.....	32	32	31	31	30
Track Buyer.....	15	18	20	22	21
Commission Merchant.....	19	21	22	24	23
Grain Dealer.....	3	6	5	5	5
Totals.....	5,408	5,448	5,469	5,484	5,510
LICENCED CAPACITY					
thousands of bushels					
Public Country Elevator.....	371,222	366,636	380,838	373,357	364,661
Grain Storage Buildings.....	2,086	7,241	10,157	12,992	14,953
Private Country Elevator.....	149	156	232	240	369
Mill Elevator.....	12,709	12,794	13,637	13,671	13,513
Semi-Public Terminal Elevator.....	146,774	139,974	138,524	137,524	137,524
Private Terminal Elevator.....	8,217	7,720	7,070	7,070	7,070
Eastern Elevator.....	110,955	110,435	97,767	94,227	94,102
Totals.....	652,112	644,956	648,225	639,081	632,192

Table C-18.—Licensed Elevators and Storage as at December 1, 1961

Kind of Elevator	Ontario	Mani- toba	Saskat- chewan	Alberta	British Colum- bia	Quebec and Mari- times	Totals
NUMBER OF ELEVATORS							
Public Country.....	3	690	2,885	1,664	19	—	5,261
Private Country.....	—	2	1	3	—	—	6
Mill.....	3	8	5	9	1	—	26
Semi-Public Terminal.....	24	2	2	3	9	—	40
Private Terminal.....	2	2	—	2	—	—	6
Eastern.....	19	—	—	—	—	13	32
Totals.....	51	704	2,893	1,681	29	13	5,371
STORAGE CAPACITY							
thousands of bushels							
Public Country.....	1,660	49,852	193,610	123,999	2,101	—	371,222
*Grain Storage Buildings.....	—	—	1,732	354	—	—	2,086
Private Country.....	—	45	22	82	—	—	149
Mill.....	1,480	2,260	4,942	4,009	18	—	12,709
Semi-Public Terminal.....	98,767	6,000	11,000	6,100	24,907	—	146,774
Private Terminal.....	2,974	3,603	—	1,640	—	—	8,217
Eastern.....	58,046	—	—	—	—	52,909	110,955
Totals.....	162,927	61,760	211,306	136,184	27,026	52,909	652,112

*Off-site storage.

Table C-19.—Warehouse Receipt Registrations for Primary and Transfer Receipts and Shipments at Semi-Public Terminal Elevators and Eastern Elevators, by Area and Grain, Crop Year 1960-61 and 10-Year Average.

Area	Grain	Crop Year 1960-61		10-Year Average, 1950-51 to 1959-60	
		Registered	Registered for Cancellation	Registered	Registered for Cancellation
		thousands of bushels			
Western Division— Winnipeg, including Lakehead and Churchill	Wheat	234,596	237,378	211,443	206,539
	Oats	33,586	32,649	62,490	64,616
	Barley	55,643	51,468	76,013	75,762
	Flax	9,540	8,092	9,574	9,643
	Rye	4,165	2,453	8,973	9,123
	Mixed Grain	225	228	655	455
	Corn			7	9
	Other Grains	233	227	154	167
Interior Elevators— Calgary, Edmonton, Lethbridge, Moose Jaw and Saskatoon	Wheat	3,889	4,846	6,130	4,927
	Oats	127	301	332	343
	Barley	1,740	1,435	1,573	1,567
	Flax	108	108	191	192
	Rye	5	5	31	35
	Mixed Grain	9	27	2	24
	Corn	8	9	13	10
	Other Grains	4,251	4,111	1,558	1,376
Vancouver and Prince Rupert Area—	Wheat	126,233	124,643	101,379	101,682
	Oats	354	1,032	2,514	3,469
	Barley	26,333	27,395	21,509	21,281
	Flax	8,032	7,321	2,482	2,465
	Rye	1,122	1,017	252	245
	Mixed Grain	10	14	30	46
	Corn	4		16	268
	Other Grains	8,498	8,349	1,960	1,955
Western Division— All Points	Wheat	364,718	366,867	318,952	313,148
	Oats	34,067	33,982	65,336	68,428
	Barley	83,716	80,298	99,095	98,610
	Flax	17,680	15,521	12,247	12,300
	Rye	5,292	3,475	9,256	9,403
	Mixed Grain	244	269	687	525
	Corn	12	9	36	287
	Other Grains	12,982	12,687	3,672	3,498
Totals—All Grains		518,711	513,108	509,281	506,199
Eastern Division—	Wheat	296,251	299,975	307,231	303,019
	Oats	32,686	30,792	42,876	42,893
	Barley	35,714	32,905	83,534	83,589
	Flax	7,287	7,405	18,649	18,729
	Rye	1,557	1,466	6,663	6,746
	Mixed Grain	452	356	528	517
	Corn	31,760	29,718	17,704	17,744
	Screenings	2,465	2,409	1,593	1,588
	Peas	96	100	130	129
	Soybeans	14,624	14,581	5,015	4,903
	Buckwheat	34	29	361	362
	Other Grains	540	540	456	463
Totals—All Grains		423,466	420,276	484,740	480,682

APPENDIX D

Inspection Branch

M. J. CONACHER, *Chief Grain Inspector*

Under Section 32 of the Canada Grain Act, the Grain Inspection Branch in the Western Division establishes grades on carlots of grain on samples drawn during unloading by officials of the Inspection Branch at the Lakehead, Pacific Coast, Churchill, Winnipeg, Calgary, Edmonton, Moose Jaw, Saskatoon, Lethbridge, Medicine Hat and Keewatin. Also, all grain shipped from terminal and mill elevators is officially sampled and inspected. At the primary inspection points of Winnipeg, Calgary and Edmonton, samples placed in railway cars by country elevator agents are removed and graded; while this service does not provide official grades of these shipments, the grades established on the unofficial samples are used by the shippers and terminal operators as a guide to their delivery and handling of the grain.

In the Eastern Division, sampling and grading service is provided on request at Chatham and Toronto for eastern grown grain. At Montreal, Quebec, Sorel, Three Rivers, Baie Comeau, St. John and Halifax, grain loaded into vessels for export is sampled and reviewed with respect to grade.

Grades of all grain in store in all terminal and eastern elevators weighed over during the crop year are verified by officials of the Inspection Branch.

Crop Conditions and Grades, 1960, Western Division

Crops in Western Canada in 1960 were generally above average in both yield and grade. Wet weather in the spring delayed seeding in many parts of the Prairies; and some 1959 crops that remained in fields over winter were not threshed until May. The good soil moisture got crops off to a fine start, and early in the season a bumper year was anticipated. Then prolonged drought and heat impeded development of grain; but final yields were still above normal. With dry and practically frost-free harvest weather, crops matured well and produced high average grades.

Manitoba No. 2 Northern was by far the predominating grade (45.4%) of red spring wheat shipments during the 1960-61 crop year. Shipments of Manitoba No. 1 Northern, at 2.3% were higher than in any year since 1955-56; only 16.3% of shipments during the crop year were in the range of Manitoba No. 4 Northern to Feed Wheat. Grades of amber durum wheat were correspondingly high; 56.8% of shipments were graded No. 2 Canada Western Amber Durum; only 7.5% of durums were graded No. 4 Canada Western and lower.

24.5% of oat shipments during the crop year were graded No. 3 Canada Western or higher, compared to the average of 17.7% during the preceding five-year period.

Barley crops suffered badly in the southern, dry belt of the Prairies in the summer of 1960; thin kernels, and peeled and broken kernels were the major degrading factors in barley from these areas. Only 29.4% of carlot shipments were graded No. 3 Canada Western or higher (including both six-row and two-row classes), compared to an average of 42.6% in the preceding five years.

The flaxseed crop in 1960 was 94.2% No. 1 Canada Western, the highest percentage of this grade in several years. The rye crop was also of high

average grade, with 71.2% graded No. 1 and No. 2 Canada Western; the low incidence of ergot, typical of a dry early summer, contributed to the high grades.

Rapeseed inspections set a new record of 6,668 carlots during the crop year; it should be noted that only one carlot was inspected as recently as the 1949-50 crop year. Mustard seed shipments of 487 carlots made the third largest on record (671 in 1958-59, and 568 in 1956-57), but this is also a notable increase from the modest figure of seven cars inspected in the 1955-56 crop year.

Safflower seed production declined during the crop year. Only 25 carlots were inspected, compared to 96 and 173 during the previous two crop years.

Crop Conditions and Grades, 1960, Eastern Division

The spring of 1960 in Eastern Canada was unusually wet and cold. Winter wheat and barley suffered so badly that crops were re-seeded to spring grains in some areas; and in the worst areas considerable acreage that had been intended for grain production was not planted. As the weather improved during the summer, crops fared better generally than was anticipated earlier; this applied particularly to the late-maturing crops, corn, soybeans and pea beans.

61% of carlots of wheat were graded No. 1 or No. 2 Canada Eastern Winter. Only 23 carlots of oats and 58 of barley were inspected in the Eastern Division during the crop year.

62% of the corn inspected in carlots was No. 1 or No. 2 Canada Eastern, dry or extra dry.

90% of edible beans inspected were No. 1 or Extra No. 1 Canada Eastern; 93.6% of the soybeans inspected were straight grade (that is, dry) No. 1 or No. 2.

Samples Submitted for Grading

16,283 samples submitted by country elevator operators and farmers, "subject to inspector's grade and dockage", were graded during the 1960-61 crop year, compared with 18,628 samples during the previous crop year.

Farmers' Complaints and Inquiries on Carlot Shipments

During the crop year 1960-61, the Inspection Branch received 28 requests from farmers to establish whether the identity of special bin grain had been preserved in the handling through country elevators. In 9 instances it was established that the identity of the farmers' grain had not been preserved.

Experiment in Primary Inspection

During the period April 1 to July 31, 1961, a trial was made to determine the value of the "primary" inspection of carlots of grain in transit, at Winnipeg, Calgary and Edmonton. During the trial period, only cars covered by waybills marked "Hold for Primary Inspection" were opened for removal of samples, and a fee of 50 cents per car was assessed for this service. The reaction of the Trade at large was so strong against the change that the Board decided to revert to the former system on August 1.

Effect of Changes in Grading of Barley

In view of the changes introduced in the grading of barley, starting on August 1, 1960, involving reduction of the tolerance of peeled and broken kernels in the malting grades, the elimination of the "commercial" grade of No. 4 Canada Western Six-Row, and the introduction of sizing specifications in the top grades, a study was made to determine the effect of these changes on the handling of barley in terminal elevators.

The study was a comparison of receipts and shipments, in and out of terminals at the Lakehead and Pacific Coast terminals, for two crop years, 1959-60 and 1960-61. In the crop year 1959-60, 17,546,853 bushels were demoted from "malting" (or "Canada Western") grades to "feed" grades in the terminals, and 1,028,118 bushels were promoted from "feed" to "malting" grades. In the crop year 1960-61, 2,530,697 bushels were demoted to "feed" grades and 2,483,622 bushels were promoted from "feed" to "malting" grades.

On the basis of these figures, it appears that the changes in grading were realistic to the extent that in 1960-61 year, the terminal operators were able to honour warehouse receipts for almost all "malting" grades (all but 47,075 bushels); whereas in the previous year there was a net loss of 16,518,735 bushels from "malting" to "feed" grades. This improvement was largely attributable to the changes in grading methods.

Change in Inspection Service at Medicine Hat, Alberta

At the request of the mill operators at Medicine Hat, the Inspection Branch discontinued removing samples from cars of grain in the railway yards there. It was decided by these operators that the value of this service did not justify its cost to them.

Deployment of Staff

The general increase in the movement of grain through the Pacific ports, including the heavy handlings of rapeseed and domestic mustard seed which are particularly consuming of the grain inspectors' time, dictated the need of additional staff there. This was accomplished by the transfer of two grain inspectors from Winnipeg to the Vancouver district, and the transfer of a vacant inspector position from Winnipeg to Victoria; the latter position was filled by promotion at the local level. Eight positions of grain sampler were also transferred to the Pacific area from interior points.

Two positions of Grain Sampler Foreman were eliminated, one at Edmonton, the other at Medicine Hat; in lieu of these the staff at Montreal was increased by two Grain Inspection Assistant positions. One Grain Sampler position was also transferred from Winnipeg to Baie Comeau.

In order to reduce the work load per man at Winnipeg, the inspectors who are assigned to Churchill during the navigation season are to be drawn from the Lakehead, instead of from the Winnipeg unit as formerly.

Collaboration with U.S.A. Grain Inspection Service

The United States grain inspection service opened offices at Montreal and at Baie Comeau in order to provide official U.S.A. inspection of their grain handled through elevators in the St. Lawrence. The sampling of the United States grain is done by the Board of Grain Commissioners' staff, with fees charged to the United States Department of Agriculture. This arrangement has operated satisfactorily for both sides.

During the 1960-61 crop year, this sampling service included 2,772,378 bushels received into Canadian elevators from a total of 27 vessels, and 29,938,978 bushels loaded at these elevators to 164 vessels.

Collaborative Studies of New Varieties

The Inspection Branch provides a special service to plant breeders of the Department of Agriculture and to the Associate Committee on Grain Research of the National Research Council, by examining and reporting on the kernel characteristics of new varieties and hybrids of wheat and barley.

Preliminary reports are made directly to plant breeders on new varieties in their earliest stages of development. These reports point out the desirable and undesirable kernel characteristics of samples. This information provides extremely valuable guidance to the plant breeders in their development programs.

In the final stages of development of each new variety, a detailed description of the kernel characteristics is given to the plant breeders and the Associate Committee on Grain Research. This report is an important factor when a variety is being considered for licensing.

In 1961, over 1,600 samples representing 128 new varieties and hybrids and selected lines of established varieties were examined and reported on.

Improvements in Equipment

During the year a total of thirty-five new automatic machines for sampling of grain have been or are being installed at nine licensed Eastern elevators, and several of the older types of automatic samplers through the terminal elevator system have been modernized. The testing program of experimental apparatus for sampling is continuing, and there is some promise of machines for this purpose being acceptable for use in elevators where structural characteristics preclude installation of presently approved sampling machines.

Investigation of a new type of artificial light, developed by United States grain inspection officials at Toledo, Ohio, appropriately named the "Toledo" light, has led to the installation of these units in most of the Inspection Branch offices in Canada. As a result, more accurate grading is possible on dull days and during operations at night; and the handling of grain is thus expedited.

The Board has had excellent co-operation from operators of terminal and Eastern elevators in the improvement of inspection offices provided for the Board's grain inspectors on their premises. Several new offices have been built, more have been renovated or remodelled, and most have been equipped with the new "Toledo" lights for grading.

Staff Training

The continued introduction of new kinds and varieties of grain in Canada, new kinds of equipment, and changes in grading technique, combined, have dictated the need to expand and intensify the training of Inspection Branch operating staffs.

The staff training program is conducted under direction of a senior inspector on the Chief Inspector's staff at head office; a senior inspector at each outside point handles the local program.

A comprehensive staff training manual has been prepared and distributed to all Inspectors and Assistants for study in conjunction with the Canada Grain Act, Board Regulations, Inspectors' Manual, and Grain Grading Guide. Complete sets of variety samples have been made available for study by all inspectors and other operating staff.

Examinations are conducted annually. Each employee who participates takes a written examination, also a varietal identification examination, and a grading test. Those who pass all three examinations receive a certificate in which they may take real pride, because these are all very real tests of skill and knowledge.

The new program is now entering its third year, and results indicate that it has become a valuable asset to Inspection Branch operations.

Foreign Visits and Visitors

Of the several hundred visitors to the Inspection Branch through the year, 127 people from foreign countries visited head office of the Branch in Winnipeg during the calendar year 1961. These included over 40 missions and delegations, plus individual people, from 33 different countries.

The Chief Grain Inspector went to Japan in May, 1961, and was accompanied by Dr. J. A. Anderson, Chief Chemist of the Board, on a trip into the People's Republic of China. The purpose of the visit to Japan was to deal with a complaint over the quality of No. 5 wheat that had been received from Canada. This matter was disposed of satisfactorily, the problem having been in the interpretation by the Japanese authorities of the definition of this grade, with which they had had relatively little experience during recent years.

The visit to mainland China also stemmed from complaints about grain received from Canada. The Chinese claimed that their own inspection proved Canadian grades wrong, and they therefore challenged the Canadian Certificate Final. The mission visited with authorities of the Chinese central government in Peking, and saw grain handling facilities and inspection methods used in the ports of Dairen, Tientsin and Shanghai. It is interesting that the work by the Chinese inspectors in their laboratories was found to be excellent; the main differences found were attributed to shortcomings in their sampling methods. These differences were apparently reconciled to their satisfaction as a result of the mission examining their system at first hand and drawing comparisons with the more efficient methods of sampling employed in Canada.

Western Division

Table D-1.—Carlot Inspections by Points, Crop Year 1960-61, compared with 1959-60

	1960-61	1959-60	1960-61	1959-60
			percent of total	
Fort William.....	165,377	155,380	55.7	57.1
Winnipeg.....	10,798	10,583	3.6	3.9
Churchill.....	9,607	12,109	3.2	4.5
Moose Jaw.....	3,681	2,879	1.3	1.1
Saskatoon.....	7,850	7,648	2.7	2.8
Calgary.....	5,150	5,472	1.7	2.0
Edmonton.....	1,429	1,782	0.5	0.7
Medicine Hat.....	2,555	2,577	0.9	0.9
Lethbridge.....	576	402	0.2	0.1
Prince Rupert.....	4,526	4,416	1.5	1.6
Vancouver.....	85,240	68,690	28.7	25.3
Totals.....	296,789	271,938	100.0	100.0

Table D-2.—Carlot Inspections, Crop Year 1960-61

Grade	Carlots	Percentage	Percentage of Total Wheat Inspected
WHEAT			
1 Manitoba Northern.....	4,444	2.3	—
2 Manitoba Northern.....	88,291	45.4	—
3 Manitoba Northern.....	54,719	28.2	—
4 Manitoba Northern.....	18,184	9.4	—
No. 4 Special.....	405	0.2	—
No. 5.....	11,210	5.8	—
No. 6.....	1,687	0.9	—
Feed.....	13	*	—
Garnet.....	35	*	—
Tough.....	9,904	5.1	—
Damp.....	29	*	—
Smutty.....	95	*	—
Rejected.....	5,051	2.6	—
Others Red Spring.....	243	0.1	—
Total Red Spring Wheat.....	194,310	100.0	90.5
1 Canada Western Amber Durum.....	370	1.9	—
2 Canada Western Amber Durum.....	11,161	56.8	—
3 Canada Western Amber Durum.....	4,484	22.8	—
Extra 4 Canada Western Amber Durum.....	2,166	11.0	—
4 Canada Western Amber Durum.....	943	4.8	—
5 Canada Western Amber Durum.....	133	0.7	—
6 Canada Western Amber Durum.....	11	0.1	—
Tough Durum.....	27	0.1	—
Others Durum.....	348	1.8	—
Total Amber Durum Wheat.....	19,643	100.0	9.2
Total Soft White Spring Wheat.....	285	—	0.1
Total Mixed Wheat.....	94	—	*
Total Alberta Winter Wheat.....	383	—	0.2
Total All Wheats.....	214,715	—	100.0

Table D-2.—Carlot Inspections, Crop Year 1960-61—Continued

Grade	Carlots	Percentage
OATS		
2 Canada Western.....	65	0.5
Extra 3 Canada Western.....	427	3.1
3 Canada Western.....	2,919	20.9
Extra 1 Feed.....	1,500	10.8
1 Feed.....	7,755	55.6
2 Feed.....	439	3.1
3 Feed.....	55	0.4
Mixed Feed.....	112	0.8
Tough.....	507	3.6
Damp.....	5	*
Rejected.....	68	0.5
Others.....	97	0.7
Total Oats.....	13,949	100.0
BARLEY		
1 Canada Western Six Row.....	18	*
2 Canada Western Six Row.....	1,065	2.4
3 Canada Western Six Row.....	10,587	23.2
4 Canada Western Six Row.....	4	*
1 Canada Western Two Row.....	1	*
2 Canada Western Two Row.....	413	0.9
3 Canada Western Two Row.....	1,308	2.9
1 Feed.....	25,305	55.5
2 Feed.....	3,799	8.3
3 Feed.....	348	0.8
Tough.....	2,248	4.9
Damp.....	22	*
Rejected.....	450	1.0
Others.....	49	0.1
Total Barley.....	45,617	100.0
RYE		
1 Canada Western.....	21	0.7
2 Canada Western.....	2,105	70.5
3 Canada Western.....	705	23.6
4 Canada Western.....	91	3.1
Ergoty.....	16	0.6
Tough.....	39	1.3
Damp.....	1	*
Rejected.....	7	0.2
Total Rye.....	2,985	100.0
FLAXSEED		
1 Canada Western.....	10,370	94.2
2 Canada Western.....	145	1.3
3 Canada Western.....	149	1.4
4 Canada Western.....	12	0.1
Tough.....	217	2.0
Damp.....	14	0.1
Rejected.....	41	0.4
Others.....	57	0.5
Total Flaxseed.....	11,005	100.0

Table D-2.—Carlots Inspections, Crop Year 1960-61—Concluded

Grade	Carlots	Percentage
Corn.....	87	—
Mixed Grain.....	134	—
Screenings.....	871	—
Buckwheat.....	25	—
Peas.....	64	—
Rapeseed.....	6,668	—
Sample Grain.....	97	—
Safflower Seed.....	25	—
Mustard Seed.....	487	—
Sorghum (U.S.A. Origin).....	40	—
Condemned Grain.....	20	—
Grand Total.....	296,789	—

* Less than 0.05%.

Table D-3.—Carlots of Tough, Damp and Straight Grain Inspected, Crop Year 1960-61

Grain	Tough	Damp	Tough and Damp	Straight	Total
Wheat.....	9,931	29	9,960	204,755	214,715
Oats.....	507	5	512	13,437	13,949
Barley.....	2,248	22	2,270	43,347	45,617
Rye.....	39	1	40	2,945	2,985
Flaxseed.....	217	14	231	10,774	11,005
Totals.....	12,942	71	13,013	275,258	288,271
Others.....	—	—	—	—	8,518**
All Grains.....	—	—	—	—	296,789
PERCENTAGE OF TOTAL					
Wheat.....	4.6	*	4.6	95.4	100.0
Oats.....	3.7	*	3.7	96.3	100.0
Barley.....	4.9	0.1	5.0	95.0	100.0
Rye.....	1.3	*	1.3	98.7	100.0
Flaxseed.....	2.0	0.1	2.1	97.9	100.0
Principal Grains.....	4.5	*	4.5	95.5	100.0
Others.....	—	—	—	—	100.0**

* Less than 0.05%.

** Details not available.

Table D-4.—Number of Two-Pound Samples "Subject to Grade and Dockage" Inspected, Crop Year 1960-61 compared with Crop Year 1959-60

Point	1960-61	1959-60
Number of Samples		
Winnipeg.....	10,026	11,828
Calgary.....	1,779	2,526
Edmonton.....	2,341	2,518
Moose Jaw.....	52	51
Saskatoon.....	298	467
Lethbridge.....	1,787	1,238
Totals.....	16,283	18,628

Table D-5.—Carlots Re-Inspected, Crop Year 1960-61

Point	In-spected	Re-In-spected	Un-changed	Grades Raised	Grades Lowered	Dockage Raised	Dockage Lowered
Fort William.....	165,377	13,179	12,037	1,024	45	5	68
Winnipeg.....	10,798	1,014	781	161	66	1	5
Churchill.....	9,607	258	217	41	—	—	—
Moose Jaw.....	3,681	190	179	11	—	—	—
Saskatoon.....	7,850	348	272	53	17	1	5
Calgary.....	5,150	352	326	24	1	—	1
Edmonton.....	1,429	54	47	7	—	—	—
Medicine Hat.....	2,555	164	120	27	17	—	—
Lethbridge.....	576	4	4	—	—	—	—
Prince Rupert.....	4,526	314	314	—	—	—	—
Vancouver.....	85,240	5,724	5,017	676	4	2	25
Totals.....	296,789	21,601	19,314	2,024	150	9	104
Percentage of Re-Inspections							
	%	%	%	%	%	%	%
Fort William.....	—	100.0	91.3	7.8	0.4	*	0.5
Winnipeg.....	—	100.0	77.0	15.9	6.5	0.1	0.5
Churchill.....	—	100.0	84.1	15.9	—	—	—
Moose Jaw.....	—	100.0	94.2	5.8	—	—	—
Saskatoon.....	—	100.0	78.2	15.2	4.9	0.3	1.4
Calgary.....	—	100.0	92.6	6.8	0.3	—	0.3
Edmonton.....	—	100.0	87.0	13.0	—	—	—
Medicine Hat.....	—	100.0	73.2	16.5	10.3	—	—
Lethbridge.....	—	100.0	100.0	—	—	—	—
Prince Rupert.....	—	100.0	100.0	—	—	—	—
Vancouver.....	—	100.0	87.7	11.8	0.1	*	0.4
Totals.....	—	100.0	89.4	9.4	0.7	*	0.5

* Less than 0.05%.

Table D-6.—Summary of Carlot Inspections Appealed, Crop Year 1960-61

Item	Winnipeg		Edmonton		Calgary		Total	
	Cars	Percent	Cars	Percent	Cars	Percent	Cars	Percent
Left as Graded.....	340	94.2	310	89.6	333	90.7	983	91.5
Grades Raised.....	16	4.4	36	10.4	32	8.7	84	7.8
Grades Lowered.....	5	1.4	—	—	2	0.6	7	0.7
Totals.....	361	100.0	346	100.0	367	100.0	1,074	100.0
Total Cars Inspected.....							296,789	100.0
Total Appeals.....							1,074	0.4
Total Grades Changed.....							91	0.03

Table D-7.—Vessel Shipments Inspected, Crop Year 1960-61

Grain	Fort William and Port Arthur	Vancouver	Victoria	Prince Rupert	Churchill	Total
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat.....	216,960,272	118,960,941	5,486,430	—	20,103,058	361,510,701
Oats.....	30,802,464	153,188	56,000	—	108,376	31,120,028
Barley.....	53,019,879	16,365,645	—	10,398,173	—	79,783,697
Rye.....	2,402,061	995,993	—	—	—	3,398,054
Flaxseed.....	7,828,417	7,168,417	249,893	—	—	15,246,727
Buckwheat.....	46,666	—	—	—	—	46,666
*Sample Grain.....	329,042	—	—	—	—	329,042
*Screenings.....	4,344,441	39,737	—	—	103,040	4,487,218
*Canada Rapeseed.....	—	6,544,179	1,317,930	—	—	7,862,109
*Mustard Seed.....	—	532,978	—	—	—	532,978
*Mustard Seed (U.S.A. origin).....	—	10,730	—	—	—	10,730
**Safflower Seed.....	—	70,358	—	—	—	70,358
Totals.....	315,733,242	150,842,166	7,110,253	10,398,173	20,314,474	504,398,308

* In bushels of 50 lbs.

** In bushels of 45 lbs.

Table D-8.—Carlot Shipments ex Terminal and Mill Elevators Inspected, Crop Year 1960-61

Grain	Winnipeg	Fort William and Port Arthur	Calgary	Edmonton	Moose Jaw
Wheat.....	152	280	189	416	946
Oats.....	232	985	13	105	9
Barley.....	299	913	801	27	5
Flaxseed.....	5	221	14	76	19
Rye.....	5	34	1	—	—
Mixed Grain.....	68	3	1	1	2
Corn.....	1	—	—	—	—
Buckwheat.....	—	6	—	—	—
Peas.....	21	—	—	—	—
Screenings.....	436	2,981	219	157	106
Rapeseed.....	11	76	229	1,004	—
Sample Feed Grain.....	28	—	39	—	15
Mustard Seed.....	1	—	—	—	—
Sample Grain.....	—	56	—	—	—
Oats Groats.....	—	—	—	—	—
Totals.....	1,259	5,555	1,506	1,786	1,102

Grain	Saskatoon	Lethbridge	Medicine Hat	Vancouver, Victoria and Prince Rupert	Churchill
Wheat.....	810	265	5	190	1
Oats.....	85	1	—	201	—
Barley.....	4	1	—	129	—
Flaxseed.....	28	—	7	—	—
Rye.....	—	—	—	11	—
Mixed Grain.....	—	—	—	10	—
Corn.....	—	—	—	—	—
Buckwheat.....	—	—	—	—	—
Peas.....	—	—	—	—	—
Screenings.....	605	6	3	1,677	—
Rapeseed.....	1,094	—	—	13	—
Sample Feed Grain.....	—	—	—	—	—
Mustard Seed.....	—	22	—	—	—
Safflower Seed.....	—	—	—	1	—
Totals.....	2,626	295	15	2,232	1

Eastern Division

Table D-9.—Carlot Inspections Eastern Grain, Crop Year 1960-61, by Grains and Points

Grain	Montreal	Toronto	Chatham	Total
Wheat.....	18	365	2,211	2,594
Oats.....	2	—	21	23
Barley.....	—	1	57	58
Buckwheat.....	—	—	9	9
Corn.....	—	2	460	462
Beans.....	—	—	188	188
Soybeans.....	—	6	559	565
Totals.....	20	374	3,505	3,899

Table D-10.—Carlot Inspections Eastern Grain, Crop Year 1960-61, by Grains, Grades and Points

Grades	Montreal	Toronto	Chatham	Total
WHEAT				
1 Canada Eastern White Winter.....	—	—	211	211
2 Canada Eastern White Winter.....	18	101	1,176	1,295
3 Canada Eastern White Winter.....	—	1	41	42
5 Canada Eastern White Winter.....	—	—	1	1
1 Canada Eastern Mixed Winter.....	—	—	40	40
2 Canada Eastern Mixed Winter.....	—	—	49	49
3 Canada Eastern Mixed Winter.....	—	—	2	2
Tough.....	—	246	607	853
Smutty.....	—	4	3	7
Weevilly.....	—	6	55	61
Damp.....	—	—	4	4
Sample.....	—	7	22	29
Totals.....	18	365	2,211	2,594
OATS				
2 Canada Eastern White.....	—	—	1	1
3 Canada Eastern.....	1	—	11	12
4 Canada Eastern.....	1	—	4	5
Tough.....	—	—	5	5
Totals.....	2	—	21	23
BARLEY				
3 Canada Eastern Six Row.....	—	—	20½	20½
4 Canada Eastern.....	—	1	28½	29½
5 Canada Eastern.....	—	—	2	2
Tough.....	—	—	3	3
Sample.....	—	—	3	3
Totals.....	—	1	57	58

Table D-10.—Carlot Inspections Eastern Grain, Crop Year 1960-61, by Grains, Grades and Points—Concluded

Grade	Montreal	Toronto	Chatham	Total
BUCKWHEAT				
2 Canada Eastern.....	—	—	5	5
Tough.....	—	—	4	4
Totals.....	—	—	9	9
CORN				
Extra Dry 1 Canada Eastern Yellow.....	—	—	45	45
1 Canada Eastern Yellow.....	—	—	163	163
Extra Dry 2 Canada Eastern Yellow.....	—	—	5	5
2 Canada Eastern Yellow.....	—	—	74	74
Extra Dry 3 Canada Eastern Yellow.....	—	—	2	2
3 Canada Eastern Yellow.....	—	—	23	23
Extra Dry 4 Canada Eastern Yellow.....	—	—	4	4
4 Canada Eastern Yellow.....	—	—	2	2
Extra Dry 5 Canada Eastern Yellow.....	—	1	—	1
Tough.....	—	—	13	13
Damp.....	—	—	4	4
Moist.....	—	—	88	88
Wet.....	—	—	37	37
Sample.....	—	1	—	1
Totals.....	—	2	460	462
BEANS				
Extra 1 Canada Eastern Pea.....	—	—	10	10
1 Canada Eastern Pea.....	—	—	158	158
2 Canada Eastern Pea.....	—	—	15	15
3 Canada Eastern Pea.....	—	—	3	3
1 Canada Eastern Cranberry.....	—	—	1	1
Sample.....	—	—	1	1
Totals.....	—	—	188	188
SOYBEANS				
1 Canada Yellow.....	—	6	309	315
2 Canada Yellow.....	—	—	214	214
3 Canada Yellow.....	—	—	9	9
Tough.....	—	—	19	19
Damp.....	—	—	7	7
Condemned.....	—	—	1	1
Totals.....	—	6	559	565
Totals, All Grains.....	20	374	3,505	3,899

Table D-11.—Cargo Inspections, Eastern Grain, Crop Year 1960-61

Grain	St. John and Halifax	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.	bu.
Wheat.....	—	84,736	173,305	768,933	1,026,974
Flaxseed.....	—	—	32,377	—	32,377
Soybeans.....	2,998	45,520	68,657	1,882,743	1,999,918
Totals.....	2,998	130,256	274,339	2,651,676	3,059,269

Table D-11A.—Cargo Inspections, Western Grain, Crop Year 1960-61

Grain	St. John and Halifax	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.	bu.
Flaxseed.....	332,946	398,250	—	—	731,196
Peas.....	15,003	49,039	—	—	64,042
Rapeseed.....	58,200	154,758	—	—	212,958
Totals.....	406,149	602,047	—	—	1,008,196

**Table D-12.—Inspections, Eastern Grain in Bins, Trucks or Warehouses,
Crop Year 1960-61**

Grain	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.
Wheat.....	—	—	1,050	1,050
Oats.....	577,984	—	—	577,984
Rye.....	—	—	650	650
Buckwheat.....	46,389	—	—	46,389
Corn.....	—	—	1,500	1,500
Beans.....	—	—	198,378	198,378
Soybeans.....	15,253	—	—	15,253
Totals.....	639,626	—	201,578	841,204

Table D-13.—Inward and Export Cargoes Sampled and Grade Checked, Crop Year 1960-61

	Montreal	Sorel	Three Rivers	Quebec	Halifax and St. John	Baie Comeau	Total
	bu.	bu.	bu.	bu.	bu.	bu.	bu.
EASTERN GRAIN							
Inward	2,101,557	—	—	—	—	—	2,101,557
Export	2,736,885	108,458	74,829	—	56,340	—	2,976,512
WESTERN GRAIN							
Inward	17,639,237	628,269	373,413	—	—	4,940,825	23,581,744
Export	64,788,589	17,893,563	14,057,131	6,560,370	33,951,498	17,498,513	154,749,664
Totals	87,266,268	18,630,290	14,505,373	6,560,370	34,007,838	22,439,338	183,409,477

Table D-14.—Grain Sampled but not Inspected, Crop Year 1960-61

	Montreal	Toronto and Chatham	Sorel, Three Rivers and Quebec	Halifax and St. John	Baie Comeau	Total
EASTERN GRAIN	6	—	101,284	—	—	6
Carlots	—	—	—	—	—	101,284
Inward Cargoes (bu.)	165,520	—	—	—	—	165,520
Outward Cargoes (bu.)	303,257	12,180	103,000	—	—	418,437
Bin Lots (bu.)	—	—	—	—	—	—
WESTERN GRAIN	402	3	663,522	—	—	405
Carlots	1,641,412	259,241	3,291,463	6,801,143	3,899,716	2,564,175
Inward Cargoes (bu.)	4,552,245	5,115	118,923	—	—	18,544,567
Outward Cargoes (bu.)	131,778	—	—	—	—	255,816
Bin Lots (bu.)	—	—	—	—	—	—
U.S.A. GRAIN	521	—	—	—	—	521
Carlots	2,336,381	—	70,000	—	365,997	2,772,378
Inward Cargoes (bu.)	6,058,402	—	2,965,410	—	20,915,166	29,938,978
Outward Cargoes (bu.)	—	—	—	4,787	—	7,857
Bin Lots (bu.)	3,070	—	—	—	—	—
Totals—Cars	929	3	7,313,602	6,805,930	25,180,879	932
—Bushels	15,192,065	276,536	—	—	—	54,769,012

APPENDIX E

Grain Weighing Branch

H. C. BRITTON, *Chief Weighmaster*

Under the provisions of Sections 33 and 124 of the Canada Grain Act, all grain received into or shipped from licensed terminal elevators is weighed under supervision of the Board's weighing staffs. Weighing services are also provided at licensed mill elevators in the Western Division.

During the Crop Year 1960-61 services were provided at 45 semi-public and private terminal elevators, and when required, at 27 mill elevators in the Western Division. Weighing services were also requested at Baie Comeau and Three Rivers for the duration of the navigation season.

All scales and equipment for transferring grain to scales on receipt and from scales for shipment in all licensed terminal elevators and serviced mill and Eastern elevators, were regularly inspected under the provisions of Section 92 of the Act.

In accordance with the special arrangement with the Standards Branch of the Department of Trade and Commerce, all scales in licensed terminal and Eastern elevators were inspected, verified and stamped by the Board's scale inspectors acting as inspectors under the Weights and Measures Act.

A semi-annual inspection was also made of all scales at terminal elevators to ascertain if scales were maintaining their accuracy. Special inspections were made when any doubt arose as to the accuracy of a scale.

Newly constructed elevator facilities and alterations to elevators and grain handling equipment were inspected by officials of the Branch to ensure that no condition existed which might affect the accuracy of the weighing of grain received at or shipped from these elevators. A recently constructed elevator annex in Port Arthur has a new type of semi-gallery loading operation to facilitate the loading of vessels, particularly those of the ocean type.

The Branch maintained a close check on reported outturns at Eastern elevators of cargoes loaded at Lakehead elevators, and thorough investigations were made in cases where complaints were received relating to reported excessive outturn shortages. Detailed reports of the results of these investigations were submitted to the Board.

Under the provisions of Sections 139 and 140 of the Canada Grain Act, weighovers were conducted at 25 terminal elevators and 25 Eastern elevators, and results were submitted to the Board for comparison with records of outstanding warehouse receipts.

Summaries of grain weighed during the crop year, and other related information, are given in the tables attached to this Appendix.

Table E-1.—Gross Quantities of all Grains Weighed at Terminal Elevators in the Western Division during 1960-61 Crop Year

Point	Wheat	Oats	Barley	Rye	Flaxseed	Canadian Corn	Canadian Buckwheat	Miscellaneous
	bu.	bu.	bu.	bu.	bu.	bu.	bu.	lb.
RECEIPTS								
Fort William-Port Arthur.....	220,146,759	34,554,796	64,516,162	4,250,046	11,177,264	—	59,755	71,739,954
Vancouver-New Westminster.....	123,973,816	358,492	16,642,560	1,151,206	8,972,814	—	—	403,268,950
Victoria.....	5,643,874	740	1,552	—	287,977	—	—	67,444,180
Prince Rupert.....	—	—	10,023,036	—	—	—	—	—
Churchill.....	19,848,805	383	—	—	—	—	—	—
Calgary.....	401,162	—	1,676,760	2,160	—	—	—	23,231,970
Edmonton.....	578,032	63,756	44,869	—	62,060	7,882	—	68,451,650
Lethbridge.....	204,761	—	—	—	—	—	—	76,460
Moose Jaw.....	1,406,160	—	—	—	—	—	—	—
Saskatoon.....	1,308,583	—	1,827	1,058	55,506	—	—	141,973,630
North Transcona.....	88,299	64,421	17,265	2,137	2,204	—	—	1,287,860
Total Receipts	373,600,251	35,042,588	92,924,031	5,406,607	20,557,825	7,882	59,755	777,474,654
SHIPMENTS								
Fort William-Port Arthur.....	217,283,778	33,006,349	59,604,989	2,453,325	8,249,171	—	59,703	451,983,300
Vancouver-New Westminster.....	119,161,911	973,487	16,990,365	1,016,601	7,168,669	—	—	688,281,935
Victoria.....	5,481,568	58,735	6,584	—	249,893	—	—	77,508,900
Prince Rupert.....	—	—	10,398,173	—	—	—	—	5,922,620
Churchill.....	20,096,952	108,376	—	—	—	—	—	5,152,000
Calgary.....	440,174	7,656	1,348,851	2,160	—	—	—	23,694,610
Edmonton.....	743,651	94,640	57,084	51,322	—	8,612	—	69,654,600
Lethbridge.....	508,292	2,336	—	—	—	—	—	2,475,010
Moose Jaw.....	1,625,226	—	—	—	—	—	—	14,500
Saskatoon.....	1,462,411	144,381	1,827	1,010	55,447	—	—	134,353,790
North Transcona.....	66,698	52,031	27,370	2,137	2,195	—	—	1,745,810
Total Shipments	366,870,661	34,447,991	88,435,243	3,526,555	15,725,375	8,612	59,703	1,440,787,075

Table E-2.—Number of Cars Leaking and Cars with Missing Seals at the Lakehead, Other Points and at Winnipeg Yards, by Railways, for the Crop Year 1960-61

Destination	Cars Leaking		Missing Seals	
	C.N.R.	C.P.R.	C.N.R.	C.P.R.
Lakehead Elevators and Yards.....	19,426	17,490	2,139	1,541
Other Points.....	8,133	8,058	1,496	988
Totals.....	27,559	25,548	3,635	2,529
Totals—Both Railways.....	53,107		6,164	
Winnipeg Yards.....	362	563	299	280

Table E-3.—Number of Cars Weighed at all Points and Percentage of such Cars found Leaking or with Defective Seals, Crop Years 1959-60 and 1960-61

	Number		Percentage of Total	
	1960-61	1959-60	1960-61	1959-60
Cars Weighed In.....	298,394	273,201	100.0	100.0
Inward Cars Leaking.....	53,107	54,986	17.8	20.1
Inward Cars with Missing or Defective Seals..	6,164	5,730	2.1	2.1
Cars Weighed Out.....	16,788	16,793	—	—

Table E-4.—Average Reported Outturn Shortages on Vessel Shipments of Grain from Fort William-Port Arthur to Canadian and United States Ports during the 1960-61 Crop Year

Grain	Bushels Shipped	Shortage in Pounds per 1,000 bushels	
		1960-61	1959-60
CANADIAN PORTS			
Wheat.....	164,254,551	33.88	32.09
Durum Wheat.....	38,458,685	45.08	35.43
Oats.....	30,934,597	21.08	24.98
Barley.....	38,842,524	28.65	33.66
Rye.....	944,073	51.85	36.68
Flaxseed.....	4,984,351	27.36	40.35
Buckwheat.....	46,666		
Sample Grain (in lbs.).....	15,827,238	.86 lbs. per 1,000 lbs.	.60 lbs. per 1,000 lbs.
Screenings (in tons).....	59,033	2.12 lbs. per ton	1.32 lbs. per ton
UNITED STATES PORTS			
Wheat.....	3,067,662	72.83	62.52
Barley.....	12,170,108	51.79	53.56
Rye.....	1,423,966	101.26	52.58
Screenings (in tons).....	35,017		
TOTAL CANADIAN AND UNITED STATES PORTS			
Wheat.....	167,322,213	34.59	32.09
Durum Wheat.....	38,458,685	45.08	35.43
Oats.....	30,934,597	21.08	24.89
Barley.....	51,012,632	34.17	38.89
Rye.....	2,368,039	81.75	49.53
Flaxseed.....	4,984,351	27.36	40.35
Buckwheat.....	46,666		
Sample Grain (in lbs.).....	15,827,238	.86 lbs. per 1,000 lbs.	.60 lbs. per 1,000 lbs.
Screenings (in tons).....	94,050	1.33 lbs. per ton	.71 lbs. per ton

APPENDIX F

The Grain Research Laboratory

J. ANSEL ANDERSON, *Director*

Section 22 of the Canada Grain Act requires that "the Board shall maintain an efficient and adequately equipped laboratory for research work in relation to grain."

The following summary of the Laboratory's work for 1961 deals with the quality of Canadian grain marketed in 1960-61, the quality of 1961 crops, research and other activities. In accordance with past practice, a separate annual report will be published by the Laboratory to put on record data on the quality of Canadian grain and progress made in research.

Quality of Grain Marketed in 1960-61

Throughout the crop year, the Laboratory continued a systematic study of the quality of red spring wheat, durum wheat, barley, flax and other cereal grains at various stages of marketing. Detailed data obtained in these studies will be reported in the Laboratory's 1961 annual report.

For five successive years, average quality of Canadian wheat has remained much the same; accordingly, wheat from the carryover and from the 1960 crop provided adequate supplies of high quality grain throughout the 1960-61 crop year. Compared with that of the previous year, wheat marketed in 1960-61 was the same in average protein content and bushel weight. Baking strength and supporting value were at the same high level, but baking absorption was fractionally lower this year. As in other years, wheat shipped from Pacific ports was more variable in average quality than wheat shipped from Atlantic ports. No. 2 Northern shipped from Pacific and Churchill ports had the highest average protein content (14.3%).

Durum wheat marketed in 1960-61 was higher in bushel weight and about the same in protein content as that marketed in 1959-60: macaroni-making quality was excellent, and rheological properties of the dough were satisfactory. The quality of malting barley, at an average level, was equal in all respects to barley marketed the previous crop year. Flax and rapeseed shipments were slightly lower in quality compared to those of the previous crop year.

Estimated Quality of 1961 Crops

One of the worst droughts over most of Western Canada followed sparse fall and spring rainfall with the result that yields of most crops were reduced to about half of normal. Harvesting, in ideal weather, was mostly completed by the end of September, and the overall quality of crops ranged from very high to average. Estimates of production for 1961 western crops are: wheat, 239 millions bushels (including 13.8 million of durum wheat); barley, 116 million bushels; flax, 15 million bushels; and rapeseed, 558 million pounds. Crops were low in moisture and practically free from the various forms of damage associated with poor harvesting weather.

The red spring wheat crop is high in grade, protein content, baking strength and supporting value. Compared with 1960-61 fourth quarter Pacific cargoes, the new crop from the western Prairies (Alberta and western Saskatchewan) shows only small differences in bushel weight, flour yield, flour

ash and flour color. Protein content is at an equally high level but baking strength is slightly lower. Baking absorption is higher and doughs have the same excellent handling quality. Compared with Atlantic cargoes for the same period, the new crop from the eastern Prairies (Manitoba and Saskatchewan) is a little lower in bushel weight but there are no differences in flour yield, ash and color. Protein content is higher, but baking strength is essentially the same. Baking absorption is higher and doughs have the same excellent handling quality.

Average protein content at 14.2% is the same as last year's figure and equal to the third highest on record. About 85% of the wheat will grade No. 1 and No. 2 Northern. As the 1961 crop is the same in protein content and similar in milling and baking quality, a continued supply of high quality grain will be available throughout the current year.

The amber durum wheat crop was produced mainly in the southern half of Saskatchewan this year. The crop is high in quality, and 85% of it will grade No. 1 and No. 2 C.W. Compared with last year's crop, the new crop is higher in bushel weight and protein content. The wheat mills well and gives a good yield of semolina that is high in yellow pigment. Rheological properties and macaroni quality are both excellent. Compared with durum wheat exported in the last quarter of 1960-61, the new crop is much the same in bushel weight and kernel weight, and higher in vitreous kernels and protein content. Because of the small carryover and the low production this year, durum wheat will be in short supply.

The barley crop suffered most from the severe drought; the hot weather reduced stooling and the crop matured early. Compared with last year's barley, the new Six-row grades are slightly higher in bushel and kernel weight, about the same in nitrogen content, and slightly lower in yield of plump barley; malt extract will be much the same. The Two-row grades are higher in nitrogen content. The introduction of sizing specifications for barley grades and the reduction in tolerance of peeled and broken kernels have helped to provide a better class of barley for maltsters and exporters. Because of the drought, high-grade barley will be in short supply.

The flax crop is of good average quality; oil content at 40.9% is slightly lower this year but protein content is about the same. Oil content (42.1%) of the rapeseed crop is somewhat higher and protein content (43.3%) is much the same as in 1960.

Bulletins and Maps

Information on the quality of different grades of the 1961 western grain crops was presented at the October meeting of the Committee on Western Grain Standards, and was later published in two maps, four crop bulletins, and four press releases; i.e., two wheat protein maps (preliminary and final); two bulletins on wheat; one on barley; and one on flax and rapeseed.

A new cover was designed for the crop bulletins and improvements were made in reporting data. Western Canada is now divided into 306 GRL (Grain Research Laboratory) districts, and samples are collected and data reported on the basis of information obtained from these districts. The bulletin "Canadian Wheat 1961" has been changed to make it more useful, particularly to importers of Canadian wheat. Information on the quality of the new crop is given for western Prairie and eastern Prairie regions which correspond to areas that supply grain to Pacific and Atlantic ports. Some of the information is also presented in French, German and Spanish. This publication has been very well received, and greater numbers than formerly have been distributed.

Publication of the quarterly bulletins (one on red spring wheat cargoes and one on durum wheat cargoes) continued during the 1960-61 crop year. Both publications gave information in English, as well as in French, German and Spanish. An English-Japanese edition for red spring wheat cargoes was published for the last two quarters of the 1960-61 crop year.

These publications are distributed by mail and over the counter by the Laboratory, by the Canadian Wheat Board, and by Canadian Government Trade Commissioners who receive their supplies direct by air mail. The bulletin "Canadian Wheat 1961" was also distributed by Canadian representatives at the International Baking Exhibition (Euroba II) in Brussels this fall.

Service to the Grain Inspection Branch

During the year the Laboratory worked closely with the Grain Inspection Branch by providing the usual services required to aid in grading grain and associated problems. Much of this work dealt with quality tests on individual cargoes and on samples used to make up Standard and Standard Export samples. Supervision of moisture testing equipment located at the various inspection offices was of major importance. Regular moisture check tests showed that 90% of the results (CAE meter method) were within 0.2% moisture; meters showing a greater than 0.2% deviation were returned to the Laboratory for adjustment. Grain companies can also check moisture results obtained on their meters with those obtained on meters located at Government inspection offices. By these procedures moisture tests throughout the grain handling system can be adjusted to a common standard.

Other studies for the Inspection Branch included: mercury detection of grain contaminated with mercurial fungicides, lipoxidase determinations on durum wheat, fatty acid tests on oil seed samples, and miscellaneous work such as checking calibration of thermometers, bushel weight measures, balances, etc.

Variety Testing

Quality testing of new varieties of red spring wheat, durum wheat, and western winter wheat developed by Canadian plant breeders is carried out annually under the sponsorship of the Associate Committee on Grain Research. Over 60 varieties were studied in 1961. Three varieties of spring wheat which have measured up to desired quality standards in such tests for at least three years, are currently included in a world-wide collaborative study designed to test their acceptance in Canadian and overseas markets. Results of this study will be considered by the Associate Committee early in 1962.

Winalta, a variety of western winter wheat which has been tested for three years, was licensed this year. This variety is readily distinguishable from spring wheat varieties, performs well agronomically, has excellent milling characteristics and, within the winter wheat class, is of good baking quality.

Studies of Canadian grown wheat varieties in the Uniform Quality Nursery have been continued and, as in the past, the Laboratory again participated in the annual quality testing of wheat varieties grown in the United States, a project organized by the Crop Quality Council. Previously these studies were focused mainly on spring wheat varieties, but this year two separate studies are being conducted, one on spring wheats and the other on winter wheats.

Quality prediction tests on early generation lines of a considerable number of spring and winter wheat varieties were carried out in co-operation

with plant breeders and cereal technologists both at the University of Manitoba and at the Canada Department of Agriculture Research Station, Winnipeg.

This year, a new feed-type barley with complete resistance to North American races of loose smut and with good resistance to stem rust was licensed and released to farmers by the Canada Department of Agriculture under the name Keystone. It is expected that this variety will be grown in the eastern provinces where it has shown high yield and strong straw.

Two hybrids with improved hull adherence have been tested this year for malting and brewing quality in co-operation with the Brewing and Malting Barley Research Institute. Studies on Two-row varieties are continuing, and some pilot malting and brewing trials were conducted in order to obtain comparisons with six-row varieties.

Research

Efficient service of the Laboratory in dealing with a wide range of problems is supported by a background of active research. Some of the research is directed towards the solution of problems of practical interest, while others add to our storehouse of general fundamental knowledge.

In basic research a study of the farinograph as a practical instrument for assessing the rheology of dough has opened up new possibilities for fundamental research on flour quality. The Laboratory is also making a substantial contribution to fundamental studies of the sulfhydryl-disulfide system in wheat proteins in relation to the physical and chemical basis of wheat quality. Our knowledge of the important role of the lipides or fats normally present in small amounts in flour, and their relation to flour quality, has been advanced considerably.

Among the more practical research projects the following may be briefly noted. Because of a wide interest elsewhere in the use of the sedimentation test as an index of wheat quality, the Laboratory is collecting information relating to Canadian wheat. Improvements in the method of detecting grain treated with mercurial fungicides are under consideration. A five-year study on the quality of flour under prolonged storage has been completed. Efforts are being made to define more precisely some measure of the quality of wheat proteins apart from their quantity. Investigations on durum wheat included a study of the causes of browning of macaroni and a development of a rapid method for measuring the color of semolina.

In general, the equipment and facilities of the Laboratory have kept pace with modern demands of an advanced research program. Facilities for studies on the chemistry of wheat and barley proteins with the aid of light scattering, electrophoresis, amino acid analysis, together with a laboratory for investigations of chemical reactions with the aid of radioactive tracers, are now available.

The malting laboratory is now fully operational with the completion of four additional germination units and a twin-kiln unit. Studies on anthocyanogen content of Canadian barley have shown that there is no relation between anthocyanogens (which are thought to be associated with the formation of chill haze in beer) and aleurone color. However, a protein complex, very similar to that found in chill haze, has been isolated from barley and malt for the first time. Its chemical composition and properties are being studied to relate these characteristics and amount with malting quality factors.

The results of various studies completed this year have been published in eleven papers in appropriate scientific journals and are thus available to scientific investigators.

Services to other Organizations

Laboratory services and technical advice have been given to the Canadian Wheat Board, Commercial Counsellors and Trade Commissioners, other Government agencies, and grain companies. Most of this work relates to the handling and promotion of sales of Canadian grain. Co-operation in some projects (mostly variety testing) has been maintained with branches of the Canada Department of Agriculture, the Brewing and Malting Barley Research Institute, Winnipeg; the Crop Quality Council, Minneapolis, and Canadian mills and grain companies.

Technical assistance on Laboratory construction and equipment and on cereal laboratory methods was given the Plant Science Department of the University of Manitoba; and a milling technologist was trained in the laboratory for this department. The Royal Commission on Government Organization was provided with detailed information on the Laboratory's organization and expenditures for scientific research and development activities. The Laboratory continued active participation in the work of the American Association of Cereal Chemists and other professional organizations.

Technical Services and Market Research Department

At the beginning of the year, the Canadian Wheat Board, in conjunction with the Board of Grain Commissioners, established a Technical Services and Market Research Department, and the Grain Research Laboratory was made responsible for all the laboratory studies required and for the training of technical personnel. This new department is operated by the Wheat Board to study the raw material requirements of present and potential importers of Canadian grain and flour, to co-operate with and visit scientific and technical personnel in mills, bakeries, etc., in importing countries, to provide technical advice and services wherever it will be mutually advantageous to do so, and to conduct market research. Dr. G. N. Irvine, an assistant director of the Grain Research Laboratory, supervises the new department, thus forming an essential link between the two Boards.

Although the Laboratory has, for many years, provided the technical services required by the Canadian Wheat Board, this work has now been extended and intensified. Training technical personnel, who are linguists with a university background but who are not trained in cereal technology, is, however, a new responsibility. They receive individual instruction, in both theory and practice, which will fit them for their work abroad. This training involves background information that gives them a perspective of the work of the Laboratory as it relates to grain marketing, grain production and varieties, movement of grain from country points to terminals, responsibilities of the Board of Grain Commissioners, Grain Standards and Associate Committees, laboratory techniques and data interpretation, grain grading, the merits of Canadian versus foreign wheats, etc. Practical training includes analytical and miscellaneous tests, milling, baking, physical dough testing, macaroni processing, Inspection Branch procedures, etc. Initial training covers about nine months with provision for subsequent refresher courses.

Laboratory studies made for the new Technical Department have involved milling, baking, dough testing and macaroni processing, and, for the most part have been concerned with foreign wheats and flours, Canadian

wheats and flours for particular markets, and milling and baking procedures that have been developed to correspond with common practice in different parts of the world. These investigations have provided information that has been helpful to overseas millers who mill Canadian wheat in mixtures with domestic wheat, to bakers who purchase local flour milled from such blends, and to the new department's technical staff in their discussions with overseas technical personnel. To cope with the larger volume of work the Laboratory is now called on to carry out, a second baking section that can operate independently, has been added to the Laboratory.

Staff

Dr. Peter Meredith of the Wheat Research Institute, Christchurch, New Zealand, received a National Research Council Postdoctorate Fellowship award tenable in the Laboratory. He is working on protein structures in dough. Dr. Narayanan, who spent two years in the Laboratory as an N.R.C. Postdoctorate Fellow, returned to the Central Food Technological Research Institute, Mysore, India. Dr. Srivastava of the University of Saskatchewan joined the Laboratory staff; he will be working on growth regulators in relation to malt quality. Mr. Matsuo is continuing his leave at the University of Alberta; he is nearing completion of his studies for a Ph.D. degree. After 24 years of service in the Laboratory, Mr. M. H. Fisher retired due to ill health, and Mr. Gary Martin resigned his position to enter the teaching profession. The two positions for summer students were filled by Mr. Robert Cumming and Miss Airdrie Walker. Several resignations and additions also occurred in the sub-professional staff.

Overseas Visits and Visitors


In the early summer, Dr. Anderson visited Japan and shortly after he returned to the Far East with the Chief Grain Inspector to visit the Peoples' Republic of China. Grain handling facilities and inspection services were studied in four major cities in China. Dr. Hlynka attended the International Biochemical Congress in Moscow, Russia, and the Conference on Basic Aspects of Dough Rheology in Wageningen, Netherlands where he presented a paper. Dr. Irvine represented Dr. Anderson at the Executive Committee Meeting of the International Association for Cereal Chemistry in Detmold; he also presented a paper at a meeting of the "Arbeitsgemeinschaft Getreideforschung" in Detmold. In connection with Technical Services and Market Research (Wheat Board), Dr. Irvine visited the United Kingdom, various countries in Europe, and the Far and Middle East.

The Laboratory was visited by missions from Austria, Belgium, Ireland, United Kingdom, Norway, Switzerland and Japan and by a United States wheat study group. There were also visitors from Australia, New Zealand, the Far and Middle East, South Africa, South America, Europe, the United Kingdom and the United States.

APPENDIX G

Canadian Government Elevators

A. H. WILSON, *General Manager*

 In accordance with the provisions of Section 166 of the Canada Grain Act and Order-in-Council P.C. 1372 of August 19, 1925, the Board manages and operates five interior terminal elevators at Moose Jaw, Saskatoon, Calgary, Edmonton and Lethbridge, and one terminal elevator at Prince Rupert, and leases one terminal elevator at Port Arthur.

In the 1960-61 crop year, all elevators continued to be operated under Semi-Public Terminal Elevator licence. Port Arthur Elevator continued under lease to McCabe Grain Company Limited.

Handlings

Wheat, barley and rapeseed were the chief crops handled during 1960-61, although substantial quantities of oats and flax passed through the elevators. Moose Jaw elevator continued to be used mainly for wheat storage and although large quantities were shipped out, these were replaced with other stocks and the elevator remains full. Saskatoon elevator used about half of its capacity for wheat storage; the other half was used for handling various other crops, the principal one being rapeseed. Calgary and Edmonton were used for mixed handlings but did substantial business in rapeseed. Lethbridge elevator was used almost exclusively for wheat storage and remained more than three-quarters full all year. As has been the case for the past several years, Prince Rupert elevator was used exclusively for receiving, cleaning and shipping barley.

Total receipts are up from 17.4 million bushels last year, to well over 19.8 million bushels, an increase of 14%. Shipments are also up from 18.1 million bushels last year, to 21 million, an increase of 16%.

Receipts of wheat were 3.8 million bushels and barley 11.6 million bushels. Practically all of the barley was shipped soon after it was received. Rapeseed receipts were up from 1.6 million bushels last year to 4.25 million bushels.

Receipts and shipments by elevators were as follows:

Elevator	Capacity	Stocks August 1, 1960	Net Receipts	Net Shipments	Stocks July 31, 1961
	million bu.	bu.	bu.	bu.	bu.
Moose Jaw.....	5.50	5,375,200	1,374,412	1,625,225	5,124,387
Saskatoon.....	5.50	3,540,817	3,948,434	4,096,182	3,393,069
Calgary.....	2.50	896,512	2,491,724	2,205,522	1,182,714
Edmonton.....	2.35	828,003	1,954,141	2,171,427	610,717
Lethbridge.....	1.25	1,047,751	209,181	580,296	676,636
Prince Rupert.....	1.25	920,531	9,878,210	10,398,173	400,618
Totals.....	18.35	12,608,864	19,856,102	21,076,825	11,388,141

Charges

All charges are unchanged from last year.

Storage charges continue at the rate of 1/45¢ per bushel per day at interiors and 1/30¢ per bushel per day at Prince Rupert.

Elevation charges at Prince Rupert are the same as those in effect at the Lakehead and other Pacific Coast ports.

Elevation charges at interiors are:

Wheat, Oats, Barley, Rye and Corn	— 1¼¢ per bushel
Flax	— 2⅜¢ per bushel

It is to be noted that elevation charges are from 1¢ to 1½¢ per bushel less than rates charged at the Lakehead and other Pacific Coast ports.

Charges for handling rapeseed are at the special tariff established by the Board of Grain Commissioners and remain unchanged from a year ago.

Maintenance

Concrete restoration carried out by the Repair and Reconstruction Unit of the Canadian Government Elevators is now complete at Moose Jaw and Saskatoon. Similar work was in progress this summer at Calgary and Edmonton, and is expected to be completed at these two points next year.

Automatic alarm systems have been installed in the dryer garners at Moose Jaw, Saskatoon, Calgary, Edmonton and Prince Rupert. At these same elevators, extensive maintenance work has been carried out on the scale beams. Modernization of electrical fixtures and lighting distribution systems in compliance with elevator safety codes, has been completed at Moose Jaw, Saskatoon and Calgary and is nearing completion at Edmonton and Prince Rupert.

At Edmonton, one dryer is presently being completely replaced with a new direct-heat oil-fired unit and the second dryer is being converted from a coal-burning to an oil-fired type. The actual installation is being carried out by our Repair and Reconstruction Unit. This will complete the dryer conversion program. All elevators are now equipped with modern dryers and are able to carry out any type of drying which might be required in the future.

Extensive dock maintenance work was carried out at Prince Rupert. This consisted mainly of replacement of eroded bolting of the dock piling braces.

Staff

Staff employed as at December 31, 1961, compared with figures at December 31, 1960, is as follows:

	1961		1960	
	Continuing Establish- ment	Casuals	Continuing Establish- ment	Casuals
Winnipeg (Head Office).....	9	1	8	—
Moose Jaw.....	31	1	32	—
Saskatoon.....	33	7	33	8
Calgary.....	32	2	32	4
Edmonton.....	32	5	32	—
Lethbridge.....	20	—	19	1
Prince Rupert.....	32	10	31	—
Repair and Reconstruction Unit..	3	11	3	—
	192	37	190	13

Revenue and Expenditure

Revenue and Expenditure for the fiscal year 1960-61 compared with the previous fiscal year, were as follows:

	1960-61	1959-60
Revenue.....	\$2,021,294	\$1,956,557
Expenditure.....	1,516,494	1,552,578
Surplus.....	504,800	403,979

For the first nine months of the current fiscal year cash revenue was \$1,734,501, and expenditure was \$970,076.

APPENDIX H

Table H-1.—EXPENDITURE, by Point, Branch and General Item, Fiscal Year ended March 31, 1961

Point and Branch	Salaries	Rent	Travel	General	Total
	\$	\$	\$	\$	\$
WINNIPEG					
Executive—Salaries of Commissioners.....	41,941.69	—	—	—	41,941.69
Executive—General.....	63,807.88	12,837.42	10,994.19	9,608.88	97,248.37
Assistant Commissioner.....	12,414.96	1,080.00	1,735.70	514.49	15,745.15
Registration.....	46,733.10	4,766.16	385.00	1,092.56	52,976.82
Research Laboratory.....	245,892.36	37,369.82	8,611.19	123,024.41	414,897.78
Statistics.....	125,038.63	12,307.56	1,575.45	36,096.25	175,017.89
Appeal Tribunal.....	6,980.00	—	—	845.40	7,825.40
Standards Committee.....	—	—	1,991.23	1,250.00	3,241.23
Inspection.....	639,377.21	29,801.48	6,154.07	43,093.34	718,426.10
Weighing.....	56,856.57	2,124.06	3,386.57	475.56	62,842.76
CHURCHILL					
Inspection.....	21,662.07	15.66	4,448.77	1,500.28	27,626.78
Weighing.....	16,726.94	10.34	3,509.74	596.61	20,843.63
KEEWATIN					
Inspection.....	3,700.74	—	—	—	3,700.74
Weighing.....	10,896.60	—	—	51.00	10,947.60
SASKATOON					
Assistant Commissioner.....	13,379.82	—	2,900.72	326.57	16,607.11
Inspection.....	43,663.72	877.00	198.14	1,977.53	46,716.39
Weighing.....	31,301.89	—	76.10	90.43	31,468.42
MOOSE JAW					
Inspection.....	20,320.93	580.00	290.17	476.53	21,667.63
Weighing.....	17,808.96	—	—	7.40	17,816.36
REGINA					
Assistant Commissioner.....	12,894.96	1,775.86	521.18	196.43	15,388.43
MEDICINE HAT					
Inspection.....	3,803.18	166.00	334.18	134.70	4,438.06
Weighing.....	10,220.72	—	627.06	28.40	10,876.18
LETHBRIDGE					
Inspection.....	8,912.50	—	77.80	108.52	9,098.82
Weighing.....	7,357.62	—	682.04	10.50	8,050.16
CALGARY					
Inspection.....	117,359.18	6,689.00	2,816.08	6,473.91	133,338.17
Weighing.....	51,252.03	726.00	2,061.51	188.60	54,228.14
Appeal Tribunal.....	6,980.00	904.75	192.45	1,345.17	9,422.37
EDMONTON					
Inspection.....	117,581.86	9,474.00	634.70	5,768.17	133,458.73
Weighing.....	17,808.18	—	193.95	46.84	18,048.97
Appeal Tribunal.....	6,980.00	1,170.00	107.70	828.38	9,086.08
Assistant Commissioner.....	13,798.78	1,992.00	2,608.34	324.45	18,723.57
VANCOUVER					
Inspection.....	239,258.16	8,611.92	1,365.47	6,822.54	256,058.09
Weighing.....	216,558.35	3,293.88	2,184.98	1,927.59	223,964.80
Registration.....	10,504.56	2,239.20	—	401.63	13,145.39

Table H-1.—EXPENDITURE, by Point, Branch and General Item, Fiscal Year ended March 31, 1961—Concluded

Point and Branch	Salaries	Rent	Travel	General	Total
	\$	\$	\$	\$	\$
VICTORIA					
Inspection.....	13,281.08	—	—	11.66	13,292.74
Weighing.....	9,725.98	—	—	5.54	9,731.52
PRINCE RUPERT					
Inspection.....	14,092.88	—	146.85	.78	14,240.51
Weighing.....	12,464.84	—	1,293.85	41.72	13,800.41
FORT WILLIAM					
Inspection.....	864,638.46	24,780.00	6,970.37	21,160.80	917,549.63
Weighing.....	716,909.96	5,328.00	34,972.58	6,342.48	763,553.02
TORONTO					
Inspection.....	9,856.15	1,200.00	405.92	453.01	11,915.08
Weighing.....	5,000.00	—	—	4.00	5,004.00
CHATHAM					
Inspection.....	36,524.27	4,320.00	8,828.35	1,234.85	50,907.47
OTTAWA					
Inspection.....	14,626.64	50.00	3,805.19	144.45	18,626.28
MONTREAL					
Inspection.....	141,004.65	4,725.00	17,722.86	4,608.75	168,061.26
Weighing.....	6,582.72	2,220.00	577.21	906.71	10,286.64
Registration.....	20,487.17	2,200.00	—	656.13	23,343.30
BAIE COMEAU					
Inspection.....	10,432.08	—	1,844.59	45.16	12,321.83
Weighing.....	—	—	—	—	—
Totals.....	4,135,401.03	183,635.11	137,232.25	281,249.11	4,737,517.50

Table H-2.—Accrued Revenue, by Point and Branch, Fiscal Year ended March 31, 1961

Point and Branch	Fees	Samples Sold	Other Revenue (a)	Total
	\$	\$	\$	\$
WINNIPEG				
Executive.....	—	—	100.00	100.00
Statistics.....	28,938.00	—	—	28,938.00
Registration.....	25,130.82	—	5.70	25,136.52
Appeal Tribunal.....	933.00	—	—	933.00
Research Laboratory.....	—	—	683.00	683.00
Inspection.....	314,206.98	7,994.53	3,472.92	325,674.43
Weighing.....	23,314.33	—	856.53	24,170.86
CHURCHILL				
Inspection.....	59,231.82	—	—	59,231.82
Weighing.....	30,403.90	—	—	30,403.90
KEEWATIN				
Inspection.....	3,257.50	—	478.34	3,735.84
Weighing.....	9,343.00	—	712.06	10,055.06
SASKATOON				
Inspection.....	25,760.47	837.36	—	26,597.83
Weighing.....	13,224.75	—	—	13,224.75

Table H-2.—Accrued Revenue, by Point and Branch, Fiscal Year ended March 31, 1961—
Concluded

Point and Branch	Fees	Samples Sold	Other Revenue (a)	Total
	\$	\$	\$	\$
MOOSE JAW				
Inspection.....	9,295.79	159.22	13.12	9,468.13
Weighing.....	4,785.90	—	231.46	5,017.36
MEDICINE HAT				
Inspection.....	10,462.34	123.64	46.98	10,632.96
Weighing.....	9,984.78	—	340.24	10,325.02
LETHBRIDGE				
Inspection.....	2,751.93	223.42	—	2,975.35
Weighing.....	450.14	—	—	450.14
CALGARY				
Inspection.....	88,155.76	2,102.71	442.75	90,701.22
Weighing.....	21,461.94	—	587.97	22,049.91
Appeal Tribunal.....	1,623.00	—	—	1,623.00
EDMONTON				
Inspection.....	107,367.66	2,163.29	1,214.42	110,745.37
Weighing.....	5,870.44	—	123.22	5,993.66
Appeal Tribunal.....	939.00	—	—	939.00
VANCOUVER				
Inspection.....	277,730.01	9,342.72	608.86	287,681.59
Weighing.....	209,872.05	—	2,706.21	212,578.26
Registration.....	11,094.82	—	—	11,094.82
VICTORIA				
Inspection.....	15,888.06	42.34	—	15,930.40
Weighing.....	11,560.90	—	3.72	11,564.62
PRINCE RUPERT				
Inspection.....	12,333.06	115.45	169.17	12,617.68
Weighing.....	8,744.49	—	64.00	8,808.49
FORT WILLIAM				
Inspection.....	600,423.17	9,488.75	1,076.34	610,988.26
Weighing.....	457,079.07	—	2,744.04	459,823.11
TORONTO				
Inspection.....	5,585.90	135.00	40.52	5,761.42
Weighing.....	4,570.00	—	—	4,570.00
CHATHAM				
Inspection.....	25,422.36	269.01	1,159.71	26,851.08
MONTREAL				
Inspection.....	11,391.38	490.23	1,856.13	13,737.74
Weighing.....	981.29	—	—	981.29
Registration.....	7,396.26	—	—	7,396.26
BAIE COMEAU				
Inspection.....	1,993.53	—	833.64	2,827.17
Weighing.....	81.30	—	2,816.14	2,897.44
Totals.....	2,459,040.90	33,487.67	23,387.19	2,515,915.76

(a) Details in Table H-4.

Table H-3.—Accrued Revenue and Net Expenditure, by Points and Branches, Fiscal Year ended March 31, 1961

	Inspection	Weighing	Appeal Tribunals	Registra- tion	Statistics	Research Laboratory	Grain Standards Commit- tees	Adminis- tration	Executive, Salaries of Commis- sioners	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
REVENUE										
Winnipeg.....	325,674.43	24,170.86	933.00	25,136.52	28,938.00	683.00	—	100.00	—	405,635.81
Churchill.....	59,231.82	30,403.90	—	—	—	—	—	—	—	89,635.72
Keewatin.....	3,735.84	10,055.06	—	—	—	—	—	—	—	13,790.90
Saskatoon.....	26,597.83	13,224.75	—	—	—	—	—	—	—	39,822.58
Moose Jaw.....	9,468.13	5,017.36	—	—	—	—	—	—	—	14,485.49
Regina.....	—	—	—	—	—	—	—	—	—	—
Medicine Hat.....	10,632.96	10,325.02	—	—	—	—	—	—	—	20,957.98
Lethbridge.....	2,975.35	450.14	—	—	—	—	—	—	—	3,425.49
Calgary.....	90,701.22	22,049.91	1,623.00	—	—	—	—	—	—	114,374.13
Edmonton.....	110,745.37	5,993.66	939.00	—	—	—	—	—	—	117,678.03
Vancouver.....	287,681.59	212,578.26	—	11,094.82	—	—	—	—	—	511,354.67
Victoria.....	15,930.40	11,564.62	—	—	—	—	—	—	—	27,495.02
Prince Rupert.....	12,617.68	8,808.49	—	—	—	—	—	—	—	21,426.17
Fort William.....	610,988.26	459,823.11	—	—	—	—	—	—	—	1,070,811.37
Toronto.....	5,761.42	4,570.00	—	—	—	—	—	—	—	10,331.42
Chatham.....	26,851.08	—	—	—	—	—	—	—	—	26,851.08
Ottawa.....	—	—	—	—	—	—	—	—	—	—
Montreal.....	13,737.74	981.29	—	7,396.26	—	—	—	—	—	22,115.29
Baie Comeau.....	2,827.17	2,897.44	—	—	—	—	—	—	—	5,724.61
Totals.....	1,616,158.29	822,913.87	3,495.00	43,627.60	28,938.00	683.00	—	100.00	—	2,515,915.76

Table H-3.—Accrued Revenue and Net Expenditure, by Points and Branches, Fiscal Year ended March 31, 1961—Concluded

	Inspection	Weighing	Appeal Tribunals	Registra- tion	Statistics	Research Laboratory	Grain Standards Commit- tees	Adminis- tration	Executive, Salaries of Commis- sioners	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
EXPENDITURE										
Winnipeg	718,426.10	62,842.76	7,825.40	52,976.82	175,017.89	414,897.78	3,241.23	112,993.52	41,941.69	1,590,163.19
Churchill	27,626.78	20,843.63	—	—	—	—	—	—	—	48,470.41
Keewatin	3,700.74	10,947.60	—	—	—	—	—	—	—	14,648.34
Saskatoon	46,716.39	31,468.42	—	—	—	—	—	16,607.11	—	94,791.92
Moose Jaw	21,667.63	17,816.36	—	—	—	—	—	—	—	39,483.99
Regina	—	—	—	—	—	—	—	15,388.43	—	15,388.43
Medicine Hat	4,438.06	10,876.18	—	—	—	—	—	—	—	15,314.24
Lethbridge	9,098.82	8,050.16	—	—	—	—	—	—	—	17,148.98
Calgary	133,338.17	54,228.14	9,422.37	—	—	—	—	—	—	196,988.68
Edmonton	133,458.73	18,048.97	9,086.08	—	—	—	—	18,723.57	—	179,317.35
Vancouver	256,058.09	223,964.80	—	13,145.39	—	—	—	—	—	493,168.28
Victoria	13,292.74	9,731.52	—	—	—	—	—	—	—	23,024.26
Prince Rupert	14,240.51	13,800.41	—	—	—	—	—	—	—	28,040.92
Fort William	917,549.63	763,553.02	—	—	—	—	—	—	—	1,681,102.65
Toronto	11,915.08	5,004.00	—	—	—	—	—	—	—	16,919.08
Chatham	50,907.47	—	—	—	—	—	—	—	—	50,907.47
Ottawa	18,626.28	—	—	—	—	—	—	—	—	18,626.28
Montreal	168,061.26	10,286.64	—	23,343.30	—	—	—	—	—	201,691.20
Bale Comeau	12,321.83	—	—	—	—	—	—	—	—	12,321.83
Totals	2,561,444.31	1,261,462.61	26,333.85	89,465.51	175,017.89	414,897.78	3,241.23	163,712.63	41,941.69	4,737,517.50

Table H-4.—Summary of Operations by Branches, Fiscal Year ended March 31, 1961

	Inspection	Weighing	Appeal Tribunals	Registra- tion	Statistics	Research Laboratory	Grain Standards Commit- tees	Adminis- tration	Executive, Salaries of Commis- sioners	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
REVENUE										
Fees.....	1,571,257.72	811,728.28	3,495.00	43,621.90	28,938.00	—	—	—	—	2,459,040.90
Samples Sold.....	33,487.67	—	—	—	—	—	—	—	—	33,487.67
Other Revenue:										
Overtime Refunded.....	7,484.34	9,545.59	—	—	—	—	—	—	—	17,029.93
Express Charges.....	3,882.00	—	—	—	—	—	—	—	—	3,882.00
Jury Fees.....	—	50.00	—	—	—	—	—	—	—	50.00
Fines.....	—	—	—	—	—	—	—	100.00	—	100.00
Refund of Previous Year's Expenses.....	46.56	1,590.00	—	5.70	—	683.00	—	—	—	2,319.56
Miscellaneous Revenue	—	—	—	—	—	—	—	—	—	5.70
Totals.....	1,616,158.29	822,913.87	3,495.00	43,627.60	28,938.00	683.00	—	100.00	—	2,515,915.76
EXPENDITURE										
Salaries.....	2,320,095.76	1,187,471.36	20,940.00	77,724.83	125,038.63	245,892.36	—	116,296.40	41,941.69	4,135,401.03
Rent.....	91,290.06	13,702.28	2,074.75	9,205.36	12,307.56	37,369.82	—	17,685.28	—	183,635.11
Travel.....	56,043.51	49,565.59	300.15	385.00	1,575.45	8,611.19	1,991.23	18,760.13	—	137,232.25
General Expenses.....	79,358.77	7,424.73	2,967.30	1,570.87	6,722.79	113,849.89	1,250.00	9,320.06	—	222,464.41
Printing and Stationery.....	14,656.21	3,298.65	51.65	579.45	29,373.46	9,174.52	—	1,650.76	—	58,784.70
Totals.....	2,561,444.31	1,261,462.61	26,333.85	89,465.51	175,017.89	414,897.78	3,241.23	163,712.63	41,941.69	4,737,517.50

APPENDIX I

Regulations

Regulations in effect December 31, 1961, made in accordance with the provisions of the Canada Grain Act

Regulation
No.

- 1 Registration and Cancellation of Terminal Elevator Warehouse Receipts.
- 2 Registration and Cancellation of Eastern Warehouse Receipts and Transfer Receipts.
- 3 Plans re Terminal and Eastern Elevators.
- 4 Cleaning of Grain and Bins.
- 5 Off Grades for Western Grain.
- 6 Off Grades for Eastern Grain.
- 7 Grades of Screenings.
- 8 Inspection of Samples taken other than at an Inspection Point.
- 9 Appeals from Inspecting Officers to Grain Appeal Tribunals.
- 10 Delivery of Grain to Ocean Vessels at St. Lawrence Ports.
- 11 Delivery of Grain to Ocean Vessels at West Saint John, N.B.
- 12 Delivery of Grain to Ocean Vessels at East Saint John, N.B.
- 13 Delivery of Grain to Ocean Vessels at Halifax, N.S.
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CANADA

ANNUAL REPORT

(OF THE)

Canada

Board of Grain Commissioners,
(for Canada)

(FOR THE YEAR)

1962



DEPARTMENT OF AGRICULTURE

OTTAWA, CANADA

Minister:

Hon. Alvin Hamilton, M.P.

Deputy Minister:

S. C. Barry

(ROGER DUHAMEL, F.R.S.C.)

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Winnipeg, Manitoba,
January 28, 1963.

The Honourable Alvin Hamilton, M.P.,
Minister of Agriculture,
Ottawa, Canada.

Sir:

We beg to submit herewith Report of the Board of Grain Commissioners for Canada for the year 1962 in compliance with Section 23 of the Canada Grain Act.

This report records information and statistics relating to grain handlings for the crop year August 1, 1961, to July 31, 1962, expenditures and revenue for the fiscal year April 1, 1961, to March 31, 1962, and summarizes the major activities of the Board for the 1962 calendar year.

Grain Supplies and Disposition — Crop Year 1961-62

Canada's 1961 crops of the five principal grains—wheat, oats, barley, rye and flaxseed—totalled just over 700 million bushels for the smallest combined output of these five grains since 1937. This reduced production level, coupled with a relatively high volume of grain exports, reduced the total year ending stocks of these grains at July 31, 1962, to 537.0 million bushels—some 36% below the previous year's revised July 31 carryover and reflecting the smallest year end holdings of grain in Canada since 1952.

Total stocks of Canadian grain held either in licensed storage, in farm bins or in transit on August 1, 1961, stood at 850.5 million bushels. The 1961 crops of wheat, 283.4 millions, oats 284.0 millions, barley 112.6 millions, rye 6.5 millions, and flaxseed 14.3 million bushels reflected the lowest output of these grains in most cases in over twenty years. The available supplies for 1961-62 comprised of new production and the inward carryover amounted to 1,551.3 million bushels for either domestic use or export—approximately 400 millions less than the stocks of grain available during the 1960-61 season.

The 1961-62 commercial disappearance volume was made up of slightly heavier exports of grain and wheat flour totalling 410.3 million bushels plus a further 604.0 millions moving into Canadian domestic channels for feed, seed, human food and industrial use. The combined disappearance total of 1,014.3 million bushels exceeded new production by more than 300 millions and reduced the closing stocks to 537.0 million bushels of the five principal grains on July 31, 1962.

Marketings

The small crop produced during 1961 was reflected in a 134.0 million bushel reduction in the volume of grain marketed by producers through the licensed elevator system during the 1961-62 crop year. For the first time in a number of years, the level of marketings was not restricted in total, at least, by congested conditions within the elevator system. Country elevator stocks dropped progressively throughout the crop year and at the close of the season amounted to 194.6 millions compared with 288.6 millions of the five principal grains held in these prairie elevators at the previous year ending. During the crop year, farmers' deliveries both east and west amounted to 415.4 million bushels made

up of 311.7 millions of wheat, 28.3 millions of oats, 59.3 millions of barley, 4.0 millions of rye and 12.1 millions of flaxseed. Western country elevators received 404.4 millions of prairie farmers grain, interior mills and private terminals handled 3.6 millions while platform loadings amounted to .1 millions. Deliveries of eastern grown grain at licensed eastern elevators totalled 7.2 million bushels which was the highest level of eastern grain marketings since 1953-54.

Country Elevator Shipments

Returns received from country elevator licensees indicate a volume of car loadings in 1961-62 of 501.5 million bushels—some 75.0 millions below the previous crop year's total. The heavier export movement out of the Pacific Seaboard resulted in a substantially increased percentage of this carlot traffic being directed to West Coast terminals. Loadings billed to the Pacific Seaboard accounted for 35.6% of the total rail loadings compared with 27.7% in 1960-61 and a recent average level of about 25% of the country elevator boxcar traffic. Shipments to Churchill represented 3.7% of the total traffic while carlots to the Lakehead accounted for only 47.0% of the total forwarding movement from country elevators. The individual grain breakdown of country elevator shipments includes the following amounts—1960-61 statistics shown in brackets: Wheat 389.0 millions (410.1 millions), oats 25.0 millions (41.6 millions), barley 71.1 millions (101.3 millions), rye 4.6 millions (5.7 millions) and flaxseed 11.8 millions (17.8 millions).

Terminal Handlings

Both receipts and shipments at Fort William/Port Arthur terminals experienced a substantial decline during 1961-62. The amount of grain unloaded at Lakehead elevators (250.6 millions) was some 75 million bushels less than the 1960-61 figure, while lake shipments (244.2 millions) were some 67 million bushels less than the volume recorded for the previous crop year. The actual bushelage volume of grain cargoes moving out of the Canadian Lakehead by direct vessel to St. Lawrence ports at 110.5 million bushels indicated a decline of 4.5 millions from 1960-61 shipments but reflected an increased percentage (45% compared with 37% in 1960-61) going on a non-stop basis to the St. Lawrence ports. Direct overseas clearances from the Canadian Lakehead declined somewhat from 16.2 million bushels in 1960-61 to 15.1 millions in the crop year under review. Shipments to U.S.A. lake ports of 11.5 million bushels (principally barley) were 5 million bushels less than in 1960-61, and reflect a further decline in this movement to United States domestic outlets.

Pacific Coast terminals exported a record volume of the five principal grains—180.9 million bushels—representing a gain of some 21 millions over the previous crop year's handlings and an increase of 11 millions over the previous record high year of 1957-58. Heavier clearances of wheat, principally destined for the expanded export market in mainland China, provided the impetus for the substantial increase in shipments recorded during 1961-62 as indicated by the following figures (with 1960-61 figures in brackets): Wheat 149.9 (124.2), oats .5 (.2), barley 23.2 (27.0), rye 1.1 (1.0) and flaxseed 6.2 (7.4), all in millions of bushels.

Overseas clearances of Canadian wheat from the port of Churchill declined fractionally to 19.2 million bushels during the 1961-62 crop year. However, the 21.5 million bushels handled during the 1962 season of navigation reflected an increase of some 2 millions over the previous season's loadings. A total of 49 vessels participated in the clearances recorded during the 1962 season of navigation at this northern port.

Eastern Elevator Handlings

Licensed eastern elevators exported a slightly reduced volume of the five principal grains totalling 150.8 million bushels during the crop year under review. On a sector basis the St. Lawrence ports shipped 129.0 millions (up 5.6 millions) of this total, while clearances from the Maritime ports of Saint John and Halifax totalled 21.8 million bushels (down 12 millions). Individually by port, Montreal cleared 60.3 millions, Sorel 23.8 millions, Three Rivers 20.3 millions, Quebec 11.3 millions and Baie Comeau 13.3 millions of Canadian grains.

Transfer receipts at St. Lawrence ports from Upper Lake and Bay ports comprised only 30% of the total inward movement at these elevators during 1961-62 compared to an average of approximately 90% in the pre-Seaway period. Receipts at the Maritime ports of Saint John and Halifax, moving chiefly by rail ex bay ports, totalled 22.3 million bushels and included a direct vessel flow ex Lakehead terminals of 5.1 million bushels.

The Canadian domestic market drew a reduced 91.0 millions of the five principal Canadian grains from licensed eastern elevators during the 1961-62 crop year. Included in this total were 49.4 million bushels of wheat, 18.1 millions of oats, 20.3 millions of barley, 1.2 millions of rye and 2.0 million bushels of flaxseed. These quantities included grain to be processed for subsequent export in the form of flour, linseed oil and other by-products.

Handlings of United States grain at eastern elevators reflected a significant increase during 1961-62 with receipts of 96.1 millions, overseas clearances of 61.9 millions and shipments to Canadian domestic outlets of 26.6 millions of U.S. grains. As in the 1960-61 crop year, the principal grains handled in this category were U.S. corn, U.S. wheat and U.S. soybeans. Eastern elevators shipped some 27 million bushels of U.S. corn overseas and moved 20.2 millions to the Canadian domestic market. Overseas clearances of U.S. wheat totalled 20.0 millions while 10 millions of U.S. soybeans were moved on a transfer reloading basis to overseas destinations through Canadian eastern elevator facilities.

Exports

Exports of the five principal Canadian grains moving via the licensed elevator system amounted to 378.4 million bushels during the crop year ended July 31, 1962. Included in the 1961-62 total were 322.7 million bushels of wheat, 2.7 millions of oats, 36.6 millions of barley, 4.4 millions of rye and 12.0 million bushels of flaxseed. Canada also exported 31.9 million bushels of wheat flour during the same period. The bulk wheat shipments indicate an increase of 12 million bushels over 1960-61 clearances. Exports of oats and rye were only slightly heavier than those of the previous year while shipments of wheat flour, barley and flaxseed reflected moderate declines in comparison to the previous year. The 410.3 million bushel total of the five principal grains plus wheat flour exported was 4.0 millions heavier than 1960-61 clearances and exceeded the long-term 30-year average by 86.0 millions. The shipment of 322.7 million bushels of Canadian wheat in bulk form through the licensed elevator system during 1961-62 has been surpassed only twice in Canadian grain trade history—first, in 1928-29 (354.4 millions) and again in 1952-53 (329.0 millions). Statistics compiled by the grains section of the F.A.O. indicate that Canada's exports represented approximately 22% of the world trade in wheat and wheat flour—a slight reduction from the 1960-61 share of the total world wheat movement.

Domestic Usage

The volume of the five principal grains moving into domestic channels for feed, seed, human food and industrial use amounted to 604.0 million bushels

during the 1961-62 crop year. This reflects a statistically indicated reduction of some 200 million bushels from the previous crop year's record figure. This decline was primarily due to the sharp drop in the "on farms" utilization of oats and barley which in turn was conditioned by the reduced 1961 crop and the difficult feeding situation which prevailed during that period. As in previous years, the bulk of the 1961-62 disappearance still involved direct feeding from farm stocks or farmer to farmer sale. Preliminary estimates place domestic usage for all purposes for the individual grains at the following totals with 1960-61 statistics in brackets: Wheat 145.5 (153.5), oats 317.4 (451.9), barley 130.7 (179.4), rye 5.8 (6.9) and flaxseed 4.6 (6.7), all in millions of bushels.

Carryover

Reports received from elevator licensees and combined with farm stock estimates indicate the July 31, 1962, carryover to be of the order of 537.0 million bushels which includes 391.0 millions of wheat, 79.1 millions of oats, 57.8 millions of barley, 3.8 millions of rye and 5.3 millions of flaxseed. This represents the smallest Canadian grain carryover since the early 1950's and is less than one-half the record year end holdings of 1,120.3 millions recorded for July 31, 1957. Over 70% of this carryover was held either in licensed elevators or in public carriers moving between licensed points compared with the 1957 situation when more than half of the year end stocks were still in farm bins.

Licensing and Bonding

The total licensed storage capacity at August 1, 1962, was 643,767,810 bushels—all in licensed elevators. All grain storage buildings authorized as supplementary annexes to country elevators were empty by July 31, 1962, and no authorities for this type of storage were issued for the crop year 1962-63. This was a major factor in the decrease of 5,540,900 bushels in capacity since August 1, 1961, as at that time 96 authorized grain storage buildings had a licensed storage of 4,604,900 bushels. The number of licences in effect for country, terminal, mill and eastern elevators showed a decrease during the crop year, totalling 5,327 at August 1, 1962, compared with 5,375 at August 1, 1961. Country elevator capacity decreased by 2.9 millions. New construction at the Lakehead accounted for the major portion of the 4.3 million increase in terminal facilities. Eastern elevator capacity dropped 2 millions with the withdrawal of two inland elevators to 108.6 millions, while mill elevator capacities showed a fractional increase.

Assistant Commissioners

Through its four Assistant Commissioners, the Board kept in close touch with the operation of licensed country elevators in the Western Division. During the year 1962, the Assistant Commissioners inspected 641 elevators in Manitoba, 469 in Northern Saskatchewan, 859 in Southern Saskatchewan, and 951 in Alberta, a total of 2,920. This inspection included checks on scales, sieves, moisture meters and certain other equipment; deductions for shrinkage and Prairie Farm Assistance Act Levy, and posting of current Board Regulations applying to country elevators.

Complaints originating from country points, including one brought forward from 1961, totalled 6, as compared with 13 in the previous year.

Disposition of complaints investigated was as follows:

	Manitoba	Saskatchewan	Alberta	Total
No grounds for complaint.....	—	3	—	3
Settlement effected.....	—	1	1	2
Complaint withdrawn.....	1	—	—	1
Totals.....	1	4	1	6

The Assistant Commissioners received and handled numerous inquiries on various matters related to country elevator operation.

Prosecutions

No penalties were levied during 1962 for breaches of the Canada Grain Act or the Board's Regulations and orders.

Shortages and Overages, Country Elevators

The light 1961 crop and the consequent lower volume of prairie marketings made it possible for the grain companies to reduce the stock levels in many of their country elevators to weighover proportions during 1961-62. As a result of this situation some 2,368 separate complete cut-off reports were submitted, more than 900 above the previous year's audits. Notwithstanding the high proportion of long period (over 4 years operations) cut-offs the relative patterns in the various classifications quoted below were significantly unchanged from previous years.

Elevators Reporting	1961-62	1960-61
Shortages.....	731	425
Neither Overages nor Shortages.....	1	2
Overages of less than .25%.....	1,117	670
Overages of .25% to .50%.....	392	249
Overages over .50%.....	127	88
Total elevators weighed over.....	2,368	1,434

The Board summoned 88 agents of country elevator licensees to appear at hearings held at Winnipeg, Regina, Saskatoon, Calgary and Edmonton, in connection with excessively high overages. At these sessions, members of the Board interviewed the agents and examined records concerning their operations in the presence of senior officials of the companies concerned.

Regulations

The following amendments were made to the Board's Regulations, effective August 1, 1962:

Regulation No. 5: The paragraph dealing with "Rejected" grades of flax-seed, rapeseed and domestic mustard seed, was revised.

Regulation No. 7: The definition of the grade "No. 1 Feed Screenings" and other portions of the regulation were revised.

Regulation No. 16: A schedule of fees to be charged to shippers for samples provided to them, was added.

Regulation No. 18: The list of sieves, scales and other equipment to be used for determining dockage in grain at licensed country elevators, was revised to bring it into line with current grain inspection procedure.

Effective September 1, 1962, the Board amended Regulations Nos. 20, 21 and 22 by increasing certain items in the maximum tariffs of charges to be made by licensed Eastern, country and terminal elevators. Maximum charges and shrinkage allowances applicable to rapeseed and mustard seed were also incorporated in Regulations Nos. 21 and 22.

Committees on Grain Standards

The Board constituted Committees on Western and Eastern Grain Standards for the Crop Year 1962-63 as provided in Section 25 of the Canada Grain Act. Personnel of these Committees is listed in Appendix A.

A meeting of the Western Committee was held at Winnipeg on October 18, 1962. The members received numerous reports relating to quality of crops grown in the 1962 season and to various other matters in connection with grading of grain, and also selected and settled standard samples and standard export samples for various grades of Western grain.

The Eastern Committee met in Toronto on August 22, 1962, and in Montreal on October 25, 1962, and established standard samples for grades of grain grown in Eastern Canada.

Both groups authorized continued use of previously selected standard samples in instances where suitable recent samples for established grades were not available.

Inspection of Grain — Report on 1962 Crops

In the spring of 1962 soil moisture reserves through most of Western Canada were the lowest in many years. Subsequently, rainfall that was erratically distributed through the growing season was substantially above the long time mean over a large part of the grain producing area. Seeding was delayed in some districts by inclement weather; in other areas the soil was so dry that initial germination was very poor and delayed germination caused some second growth that did not mature before harvest.

Nineteen hundred and sixty-two has produced grain with a wide range in quality, including substantial proportions of low grades. It has been estimated that less than 4% of the red spring wheat will grade No. 1 Manitoba Northern and less than 1% of the amber durum crop will grade No. 1 Canada Western. All kinds of grain, including oil seeds, suffered similarly; frost damage and weathering account for most of the low grades. The incidence of blackpoint and smudge, which are the result of fungous diseases, is uncommonly high in durum wheat. Ergot is a more serious degrading factor than it has been for several years.

Whereas normally about 40% of the crop of barley produced in Western Canada enters the top or malting grades, it has been estimated that only about 20% of the 1962 crop barley is sufficiently high in quality to meet the requirements of domestic and export malting trade.

Frost damage was most severe in central and northern Alberta and in extensive areas of Saskatchewan. The northern areas, particularly in Alberta, experienced extremely difficult harvesting conditions through rain and snow;

the eastern part of Manitoba also received extensive damage from weathering, and harvesting was seriously delayed. Substantial quantities of grain will be dried through the winter, in terminal elevators.

The quality and yield of the 1962 rye crop is extremely variable; blackpoint and ergot, diseases to which rye is more susceptible than the other cereals, have caused substantial losses of grade; weathering, including sprouting, have also caused some damage.

Rapeseed, now grown over a large part of the three prairie provinces, suffered severe damage from frost in many districts. Domestic mustard seed, also dispersed through many districts in all three prairie provinces, was more severely damaged in 1962 than in any previous year of large-scale production; whereas most domestic mustard seed is sold on the basis of No. 1 C.W. grade, the bulk of the 1962 crop grades No. 2 or No. 3; this lower quality is detrimental to sales in some markets.

Flaxseed was damaged by frost and excessive rain, and even by flooding of fields in some areas; quality of this crop ranges from very good to very poor.

The quality of field peas produced in Western Canada is unusually poor in 1962; the main defects are frost damage that have caused high percentages of green kernels, and adhered soil. Processors are having difficulty to meet the export demand for high quality peas.

Research Laboratory

Major changes occurred in the Laboratory staff; Dr. Anderson was appointed Director of the Research Station, Canada Department of Agriculture, Winnipeg, but continued to act as director of the Board's Laboratory pending appointment of his successor. Mr. Aitken, who had served under all three Chief Chemists of the Board, retired, and Dr. Bushuk resigned his position to become Director of Research, Ogilvie Flour Mills Company Limited, Montreal.

The Laboratory studied the quality of the 1962 crops and of grain marketed in 1961-62. Detailed information was reported to the Committee on Western Grain standards and was published in maps, crop bulletins and cargo bulletins. As in previous years, important parts of principal bulletins were also published in French, German, Spanish and Japanese.

The Laboratory worked closely with the Inspection Branch and provided information on studies of individual cargoes, supervision of moisture testing, tests for possible contamination of grain with mercurial fungicides, and other work. Studies on new varieties continued as usual. A world-wide collaborative study initiated in 1961 showed that two new wheat varieties developed by the Canada Department of Agriculture were of satisfactory quality; one of these was developed for the saw-fly area and has been released under the name Cypress.

Technical advice and laboratory service has been given to Trade Commissioners and other Government agencies and grain companies. In addition, the Laboratory continued the training of technical officers for the Technical Services and Market Research Department of the Canadian Wheat Board. Two of these officers have completed several successful missions abroad.

Research projects included the study of wheat quality from the point of view of its disulfide-sulphydryl chemistry. The various projects completed during the year have been published in 11 papers appearing in appropriate scientific journals.

The Laboratory continued active participation in the work of the American Association of Cereal Chemists and other organizations. During the year, Dr.

Anderson attended the meetings of the International Association for Cereal Chemistry in Vienna and also visited a number of laboratories in England. Dr. Irvine's work for the Wheat Board took him to the Far and Near East, India, Nigeria, as well as Europe. The Laboratory was also visited by missions and visitors from many parts of the world.

A summarized account of the work undertaken by the Laboratory is given in Appendix F, and more complete detailed information will be published in the Laboratory's annual report for 1962.

Weighing of Grain

The staff of the Board's Weighing Branch provided usual weighing services at licensed elevators and investigated complaints relating to reports of excessive outturn shortages on carlot and cargo shipments. The Board's scale inspectors carried out periodic tests and inspections of scales at licensed terminal and eastern elevators, and made special inspections when such were considered necessary. Further detailed information in regard to the work of this Branch is given in Appendix E.

Weighover of Stocks, Terminal and Eastern Elevators

In accordance with the provisions of Sections 139 and 140 of the Canada Grain Act, 15 terminal and 22 eastern elevators were weighed over during the 1961-62 crop year by members of the Board's Weighing and Inspection staffs.

Deferments into the following crop year were made at 14 terminal elevators at the Lakehead, 17 terminal elevators at other points, and at 9 eastern elevators. The Board found it necessary to grant these deferments to avoid delaying the handling and loading of grain required to meet export orders. However, it was possible to carry out nine of these deferred weighovers before the end of December, 1962.

Tables C-12 to C-14 of Appendix C contain the results of weighovers carried out in the 1961-62 crop year.

Entomological Investigations

To safeguard Canadian grain in storage from losses by insects, the regular program of inspection of terminal elevator premises and grain stocks was continued in 1962. Practically all of the terminal elevators were visited at least once during the year. Those in the St. Lawrence area, the Bay Port region and in the Vancouver area were inspected on two occasions. Discussions were held with management at the time of each inspection. When necessary, instructions were issued regarding control measures.

For the most part, the terminals were essentially free from insect pests and only a limited amount of control work was necessary. The most serious problem occurred at one of the elevators at Fort William which had been out of operation for several months. General clean-up and spraying was sufficient to restore it to satisfactory condition. Special attention has been given to the terminals on the Pacific Coast because of the large amounts of grain being shipped to fulfill the contracts with China.

Considerable amounts of United States grain are being shipped through the St. Lawrence Seaway for export through Canadian elevators. Because of the shortage of certain feed grains in Eastern Canada, larger than usual amounts of

United States corn have been imported for domestic use. Some time has been spent throughout the season in checking on this grain in storage in Canadian elevators.

The regular inspection of all of the Canadian Government Elevators, with the exception of the one at Prince Rupert, was carried out in 1962. In some cases the older stocks have been shipped from the interior terminals. Large representative samples were drawn from the bottom of all the storage bins and examined for grain pests. In general, these elevators were freer from pests than in 1961.

The usual analysis of carlots of grain found to be infested with grain insects at the time of unload at terminal elevators has been made. This year the total number of cars was 32 as opposed to 203 in 1961. Many of the cars in this category in 1961 resulted from the clean-up of country annexes.

Close contact has been maintained with the various grain inspection offices of the Board by regular visits to them during the season. Insect control was discussed with staff members on these occasions.

Preparation of an illustrated section dealing with the description, life-history, and habits of the various grain-infesting pests for the Grain Inspector's Manual is now in progress.

The Board's Entomologist, Dr. H. E. Gray, has continued to maintain close contact with the grain and milling trade. He attended the annual convention of the Association of Operative Millers in Denver, Colorado, in May, 1962.

Close liaison has been maintained throughout the year with the Plant Protection Division and the Canadian Wheat Board of the Department of Agriculture on matters relating to grain storage and grain-infesting insects.

Terminal and Eastern Complaints

During 1962, the Board directed the investigation of 56 complaints relating to reports of excessive outturn shortages on vessel shipments to Eastern Canadian points.

Included were 47 on shipments from Fort William and Port Arthur, 7 on shipments from Eastern transfer ports, and 2 on shipments from U.S.A. ports.

These complaints were disposed of as follows:

No cause of reported discrepancy found.....	33
No grounds for complaint.....	1
Settlement effected.....	9
Complaint withdrawn.....	1
Not yet disposed of.....	12
Total	56

Complaints on Export Shipments

A total of 34 complaints relating to shipments to Overseas destinations were dealt with by the Board and its officials during 1962. Of this number, 22 concerned outturn weights reported from Overseas, and 12 referred to some aspect of the quality of grain cargoes.

Disposition was as follows:

	Quality	Weight
No cause of reported discrepancy found.....	—	17
No grounds for complaint.....	11	—
Settlement effected.....	1	—
Complaint withdrawn.....	—	5
Totals.....	12	22

Statistics

Statistics relating to Canadian grain movement collected and compiled by the Board's Statistics Branch are presented in Appendix C of this report.

Information Program

The Board's Mobile Grain Grading Exhibit was changed somewhat to include a long-term protein map together with large pictures illustrating the difference between bread baked from high quality gluten typical of Canadian Red Spring Wheat and that made from poor quality gluten from European Soft Wheat. A working model of a Laboratory Gluten Washer was used to illustrate gluten quality. Basically, however, the Exhibit continued to feature the main grades of grain together with pictures and posters illustrating the work of the Board.

This exhibit was staffed by two of the Board's grain inspectors and was on display at 17 Agricultural Fairs, one Field Day, and at the Grain Exchange Building, Winnipeg. One of the Board's Assistant Commissioners was in attendance at most of the Fairs.

Two small exhibits were prepared for display at indoor events. The first one featured malting barley and was shown at the Calgary and Thorsby Seed Fairs in Alberta, and at the Manitoba Winter Fair at Brandon. The other one featured the different grades of wheat together with large photos showing the difference in the loaves of bread baked from No. 2 Northern Wheat and from frozen No. 5 Wheat. This exhibit was taken to the Saskatchewan Farmers' Union meeting at Saskatoon in December, and will be shown at some Winter Seed Fairs early in 1963.

In addition to the above, six Barley Harvesting Field Days, arranged by a malting company, were attended by a Board grain inspector, and posters and barley grades were displayed.

The Board's offices were visited by a number of officials of the Foreign Trade Service of the Department of Trade and Commerce, and by other individuals and groups from Overseas and the United States who wished to discuss matters related to the grain trade and obtain first-hand information about the functions and services of the Board. Other visitors during the year included groups of country elevator agents and agriculture students.

In addition to discussions with members and officials of the Board, arrangements were made for visitors to tour the Inspection Branch, the Research Laboratory and other branches as desired; also to view the colour motion picture film "Grain Handling in Canada."

Members of the Board and senior officials again accepted a number of invitations to address annual meetings of producer organizations and to discuss topics of current interest related to the Board's work.

Canadian Government Elevators

Receipts of grain during the crop year 1961-62 at the Canadian Government Terminal Elevators operated by the Board at Moose Jaw, Saskatoon, Calgary, Edmonton, Lethbridge and Prince Rupert, were 17.9 million bushels, compared with 19.9 millions in the previous crop year. Total shipments were 20.1 millions, a decrease of approximately 1.0 million bushels from the corresponding figure for 1960-61.

In the fiscal year 1961-62, revenues exceeded expenditures by the amount of \$423,766.

Lake Freight Rates

On March 10, 1959, under the provisions of Section 5 of the Inland Water Freight Rates Act, the Board issued Order No. 21 which revoked Order No. 20 of September 28, 1954. This had the effect of cancelling maximum freight rates established by the Board in Order No. 20 for the carriage of grain from Fort William or Port Arthur to other specified ports in Eastern Canada.

The average rates charged during the 1962 season of navigation are given in Table C-11 of Appendix C.

Prairie Farm Assistance Act

Under provisions of Section 11 of the Prairie Farm Assistance Act, the Board continued to collect the one per cent levy on grain purchased by licensees under the Canada Grain Act. During the crop year 1961-62, the amount collected was \$6,839,499.00, a decrease of \$101,595.00 from collections recorded for the previous crop year. Collections by the Board since the inception of the Act (August 1, 1939) to July 31, 1962, total \$134,092,707.00.

Organization and Personnel

Mr. G. N. McConnell, Chief Commissioner, died on November 22, 1962, after six years of service with the Board; four years as Commissioner and two years as Chief Commissioner. Mr. F. F. Hamilton, who had served as Assistant Commissioner at Saskatoon, was appointed Chief Commissioner.

There were two appointments of Assistant Commissioners during the year; Mr. R. H. Taylor on August 1 at Regina, and Mr. J. H. Davidson on December 4, replacing Mr. Taylor who was transferred to Saskatoon.

Dr. J. A. Anderson, Director of the Grain Research Laboratory since June 1, 1939, left on October 22, 1962, on his appointment as Director of the Winnipeg Research Station of the Canada Department of Agriculture.

Mr. D. E. Ross, Chairman of the Winnipeg Grain Appeal Tribunal, retired on December 4, 1962. Mr. J. L. A. Doray, Chairman at Calgary, was transferred to Winnipeg, and the Calgary Tribunal was abolished.

There were several changes in senior personnel of the Inspection Branch. Mr. P. Fraser, Assistant Chief Inspector, retired on April 30, 1962, after 42 years of service. Mr. M. M. Ainslie, Grain Inspector-in-charge at Montreal, succeeded Mr. Fraser. Mr. G. T. Killeen replaced Mr. Ainslie. Mr. F. L. Varley retired on August 10, 1962, and was succeeded as Grain Inspector-in-charge at Winnipeg, by Mr. W. Storrie.

As at December 31, 1962, the Board's staff totalled 866 as compared with 903 at the end of the previous year. The staff of the Canadian Government Elevators numbered 199, a decrease of 30 from the previous year.

A chart of the Board's organization, including further details of staff location, follows this report.

Expenditure and Revenue

Total expenditure and accrued revenue of the Board, exclusive of the Canadian Government Elevators, for the fiscal year 1961-62 compared with 1960-61 was as follows:

	1961-62	1960-61
Expenditure.....	\$4,885,262.36	\$4,737,517.50
Revenue.....	3,001,112.25	2,515,915.76

Expenditure for the nine months of the 1962-63 fiscal year to December 31, 1962, totalled \$3,503,397 as against \$3,671,359 for the comparable period during 1961-62.

Cash revenue for the same nine-month period amounted to \$1,745,720 as compared with \$2,226,156 in the previous year.

Attached hereto is a series of Appendices which outline in greater detail the work of the Board's Branches.

Respectfully submitted,

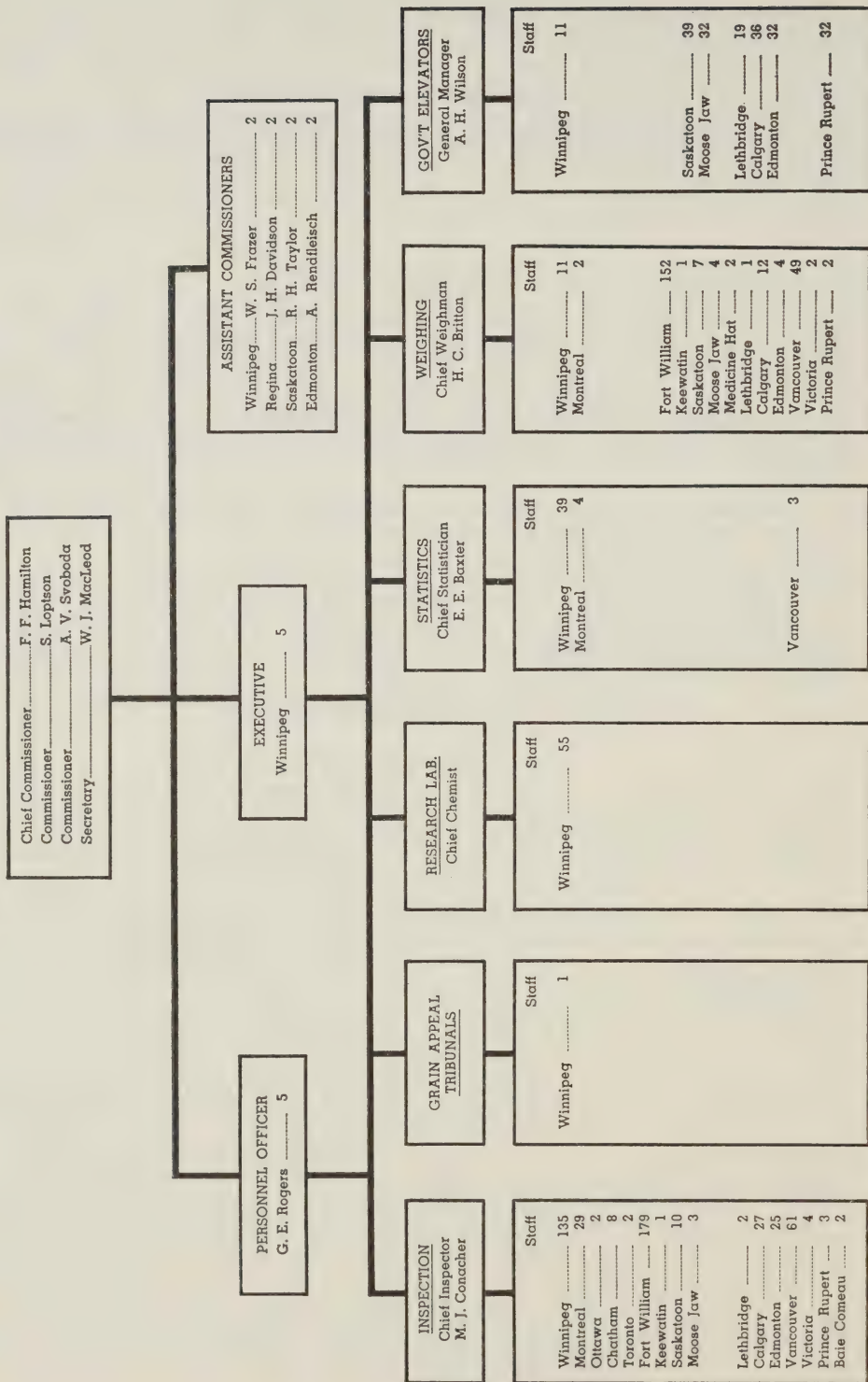
FRANK HAMILTON,
Chief Commissioner

S. LOPTSON,
Commissioner

A. V. SVOBODA,
Commissioner

W. J. MacLEOD,
Secretary

BOARD OF GRAIN COMMISSIONERS FOR CANADA



APPENDIX A

Committee on Western Grain Standards as at December 31, 1962

F. F. Hamilton, Chief Commissioner, Board of Grain Commissioners.
S. Loptson, Commissioner, Board of Grain Commissioners.
A. V. Svoboda, Commissioner, Board of Grain Commissioners.
M. J. Conacher, Chief Grain Inspector, Board of Grain Commissioners.
Dr. J. A. Anderson, Chief Chemist, Grain Research Laboratory.
J. L. A. Doray, Chairman, Grain Appeal Tribunal, Winnipeg.
Dr. A. E. Hannah, Dominion Cerealists.
L. A. McCorquodale, representing the millers of wheat flour.

H. Anderson	}	Representing grain growers in Alberta.
R. J. Graham		
B. S. Plumer		
K. Anderson		
J. H. Harrison	}	Representing grain growers in Saskatchewan.
A. P. Gleave		
J. Wellbelove		
L. L. Gray		
N. W. Strelloff		
W. J. Parker	}	Representing grain growers in Manitoba.
P. A. McPhail		
Ray Mitchell		

G. Constable, representing grain growers in British Columbia.
L. Bell, representing Plant Products Division, Department of Agriculture.

Committee on Eastern Grain Standards as at December 31, 1962

F. F. Hamilton, Chief Commissioner, Board of Grain Commissioners.
S. Loptson, Commissioner, Board of Grain Commissioners.
A. V. Svoboda, Commissioner, Board of Grain Commissioners.
M. J. Conacher, Chief Grain Inspector, Board of Grain Commissioners.
W. G. Thomson, representing Montreal Board of Trade.
E. D. Sullivan, representing Toronto Board of Trade.
C. Gordon McAuley, representing exporters of grain.

F. H. Dunsford	}	Representing millers of wheat in the Eastern Division.
C. L. Rogers		
J. R. Heaney	}	Representing grain growers in Ontario.
F. Cryderman		

G. C. Nichols, representing growers of corn.
P. Blouin, Additional.
A. Bowman, Additional.

APPENDIX B
Grain Appeal Tribunals

Winnipeg

D. E. Ross (Chairman)
J. E. G. Hasell
J. F. Lazenby
Wm. E. McLeod
G. I. Rocan
E. A. Sangster
R. C. Sproule
C. E. Rippin
G. A. Turner
N. Kawka (Secretary)

Toronto

A. D. Clarke
J. Elder
A. C. Gillespie
J. R. Heaney
J. Jervis
S. M. Lockington
A. L. Walker
D. C. Kay, Jr. (Secretary)

Calgary

(Discontinued September 30, 1962)
J. L. A. Doray (Chairman)
G. R. Deeton
B. T. Jenkins
W. F. Fennell
A. E. Longhurst
W. G. McLeod
W. M. Pringle
J. Tranter
J. D. Toomer

Montreal

G. T. Killeen (Chairman)
P. Blouin
S. Brooks
J. A. Byrne
E. B. Paterson
R. Strauss
Miss C. Box (Secretary)

For information on Appeals of Carlot Inspections refer to Appendix D.
Table D-6.

APPENDIX C

Statistics Branch

E. E. BAXTER, *Chief Statistician*

(A) STATISTICS

The Branch receives reports from all elevators licensed under the Canada Grain Act and from these returns compiles and publishes basic statistics relating to the storage and handling of grain within the Canadian elevator system. It prepares audit statements of the operations of all terminal and eastern elevators, verifies the insurance carried on grain stocks and handles the record details relating to the amounts collected as the 1% levy under the Prairie Farm Assistance Act. It supplies for review by the Board a detailed analysis of all grain handlings and co-operates with other Board offices in the maintenance of detailed records of principal operations.

(B) LICENSING

The Canada Grain Act establishes the terms under which any elevator shall be licensed by the Board for the receipt or discharge of any western grain. The Act also specifies the conditions by which grain dealers, track buyers or grain commission merchants must be licensed in order to engage in contracts dealing with western grain by grade name. Such elevator and dealers' licences are issued by the Board through the licensing division of the Statistics Branch. This office also supervises the implementation of Section 79-3 by which all such licensees must be secured by bond or otherwise for the performance of all obligations imposed upon them by the Act.

(C) REGISTRATION

Section 127 of the Canada Grain Act requires the operators or managers of public terminal, semi-public terminal and eastern elevators to issue warehouse receipts or transfer receipts for all grain taken into store. Regulations No. 1 and No. 2, made by the Board under the provisions of Section 15 (22) of the Canada Grain Act, require that all such warehouse receipts or transfer receipts be registered with the Board as to grade and quantity at the time of issue, and that these warehouse receipts or transfer receipts be surrendered to the Board for registration for cancellation when the grain which they represent has been shipped out. Sub offices are maintained at Montreal and Vancouver.

Introductory Comment

The separate functions set out above are now administered through the combined Branch with its central office in Winnipeg and sub offices in Montreal and Vancouver. This integration was reviewed by the investigating officers of the Royal Commission on Government Organization and considered an effective unit. Preliminary steps were taken towards the amalgamation of the Board's clerical functions at Vancouver; the combined offices will be administered by this Branch.

The office continued to work in close co-operation with the other branches of the Board, acting as their central statistical and records unit and collaborating on related controls operations. A similar co-operative relationship was maintained with corresponding units of the Canadian Wheat Board and the Dominion Bureau of Statistics and with the Grain Division of the Department of Agriculture.

The services of the Chief Statistician and the records facilities of office were made available to the special Interdepartmental Committee on Canadian Grain Storage and Handling in the Committee's study of the Canadian elevator system. As a member of the Committee, the Chief Statistician directed the compilation of the statistical material for the Committee's report, submitted independent reports on certain key subjects and participated extensively in the preparation of the report.

(A) Statistics

The Division continued to serve as the principal source of Canadian grain storage and handling statistics both in the release of regular bulletins and in the preparation of special reports and studies for Governmental and trade offices. Regular continuing service in both statistics and records was provided for the other divisions of the Board. Special analytical studies were prepared on request for the information of the Board.

The two principal areas of direct co-operative action on the collection and dissemination of grain statistics, the first with the Canadian Wheat Board, and the second with the Dominion Bureau of Statistics were further refined during the year. To eliminate duplication of services, this Branch assumed responsibility for the public mailing list previously serviced by the Canadian Wheat Board, "Statistical Summary." Similar action is currently being explored with respect to the "Grain Statistics Weekly" bulletin issued by the Agriculture Division of the Dominion Bureau of Statistics.

As referred to in the introductory comment, the records and facilities of the Branch were used extensively by the Interdepartmental Committee on Canadian Grain Storage and Handling. The office also co-operated with officials of the Provincial Governments, the railways and the grain companies in the provision of capacity and shipping data required in the study of prairie rail branch line abandonment problems.

Pursuant to the provisions of the Inland Water Freight Rates Act shippers filed with the office copies of vessel charter confirmations covering all lake grain cargoes shipped from Fort William-Port Arthur to eastern Canadian ports. The charters covered some 649 cargoes carried in the Canadian coasting trade during the 1962 season from the first grain shipment on April 17th to the final loading on December 13th. A summary statement of the average rates prevailing on these cargoes over the season appears in the tables appended to this report.

Audit examination was conducted in connection with the weighup of 2,368 country elevators; this represented an increase of 934 cut-offs over the 1960-61 numbers and reflected the reduced storage level in country elevators which prevailed during the later portion of the crop year. The records and statements prepared in connection with the grain audits at terminal and eastern elevators under the provisions of Sections 139 and 140 of the Canada Grain Act are summarized in the Tables C12 to C14 inclusive of this appendix. Additional studies in both of these areas were carried out by the research staff of the Branch to assist the Board in its review of these audits and to guide the Inspection and Weighing Branches in their operational control work.

The collection of the 1% levy made under provisions of Section 11 of the Prairie Farm Assistance Act and under authority delegated to this office involved 1961-62 returns totalling \$6,839,498.57. This represented a decline of \$101,595.84 from the level of 1960-61 collections and reflected the lighter volume of primary marketings. As provided by Federal-Provincial arrangements relative to the Provincial Crop Insurance Programs, grain otherwise subject to the levy but

produced on land covered by either the Manitoba or Saskatchewan Crop Insurance Plans was exempted from the 1% levy deduction. Special control checks were established in co-operation with the two insurance agencies and the grain company offices to meet the problems created by this exemption.

(B) Licensing

At December 1, 1961, the close of the initial licensing period of the crop year 1961-62, 5,408 licences were in force, issued to 85 firms and individuals. Included in these were 37 licences granted to Track Buyers, Commission Merchants and Grain Dealers. In addition, country elevator licensees were authorized to use 58 off-site grain storage buildings of various types.

In the course of the crop year 1961-62, 27 licences were cancelled, by reason that 5 elevators were destroyed by fire, 12 were cancelled by company request, either because the elevator was to be dismantled, leased or sold, 3 were converted to annexes, and 2 elevators on an abandoned railway line submitted their licences for cancellation when emptied of grain.

Eight country elevator licences were suspended during the crop year, either during re-construction or renovation of building, or in the case of destruction by fire, the erection of a new elevator on the site and, in the case of an elevator on abandoned railway trackage, the movement of the house to a site on another line. Six of these licences were reinstated, while in two instances, application for licence was not made for the crop year 1962-63.

Guarantee bonds in the amount of \$30,687,785.00, executed by 14 approved surety companies, were deposited with the Board as security under Section 79 of the Canada Grain Act to cover operations of licensees during 1961-62. Negotiable Government bonds in the amount of \$1,000.00 were held in lieu of the usual form of surety bond.

As at August 1, 1962, 5,327 elevator licences were in force, with a total storage capacity of 643,767,810 bushels. During the 1961-62 crop year, under the impact of the heavy export movement, grain supplies in Canada dwindled rapidly, with stocks in licensed off-site storage buildings moving forward to terminal positions. By the close of the crop year all those buildings were empty of grain and no authorities for this type of storage were issued for the 1962-63 season. The total licensed elevator capacities by provinces are: Manitoba 59.4, Saskatchewan 208.8, Alberta 135.1, British Columbia 27.0, Ontario 160.5, Quebec 45.7 and the Maritimes 7.2 million bushels.

The major changes in the composition of this storage since August 1, 1961, were decreases of 2.9 millions at public country elevators, 2.4 at Eastern elevators and the disappearance of the 4.6 millions capacity formerly held under off-site storage authorities. Partially off-setting these declines was the advance in capacity of terminal elevators amounting to 4.3 million bushels, with new construction at the Lakehead accounting for 3.6 million of this increase.

The crop year 1961-62 saw the beginning of the abandonment of branch lines by the two major railway companies. Four lines were abandoned as at August 1, 1961, affecting 25 country shipping points. At August 1, 1962, another 3 lines were abandoned with 5 country shipping points involved. Those elevators remaining on such lines were licensed as "abandoned" elevators with a special surcharge on each licence stating they were to be operated solely "for the storage of that grain held in the elevator at the beginning of the crop year or the official date of abandonment, whichever date shall be later." As soon as any such elevator becomes empty of grain, the licence must be surrendered to the Board of Grain Commissioners for cancellation.

By August 1, 1962, some 47 public country elevators had been affected by the current railway branch line abandonment program. The companies applied for "railway abandoned" (R. A.) licences for 41 of these for the 1962-63 crop year and are continuing to operate these elevators on the above described conditions. During 1961-62 one of the companies experimented in building moving and transferred two of their abandoned elevators to new locations, one as an annex to a regular elevator, the other to a separate site on a continuing rail line. The licence for a third elevator was cancelled during the year and three more licences were allowed to lapse at the close of 1961-62.

(C) Registration

During the 1961-62 crop year, registration service was provided for licensees of 40 semi-public terminal and 32 Eastern elevators at offices of the Board located at Winnipeg, Montreal and Vancouver.

Total quantities of warehouse receipts registered or registered for cancellation, as determined by volume of grain received and shipped at the Lakehead and Interior groups of elevators, are somewhat less than those shown for the 10-year average. The average figures, of course, include the handlings for the bumper crop years, 1951-52 and 1952-53, so that they do not, in this instance, provide a normal comparison. Handlings for the Pacific Coast group of elevators continue to break all existing records. Gains of 20 million and 50 million bushels respectively were recorded for both quantities registered and registered for cancellation over those of the previous year's handlings and of the 10-year average.

Reflecting the changing pattern of the grain movement throughout the Eastern Division, brought about by the direct shipment as opposed to the transfer shipment of grain through the St. Lawrence Seaway system, the handlings for the group of elevators in this Division show declines of 86.8 million and 68.4 million bushels from those shown for the 10-year average.

Machine tabulated data of handlings for semi-public terminal elevators at the Lakehead, as related to the registration and cancellation of warehouse receipts, was transcribed by facsimile posting equipment to special ledger cards daily, to provide a visual record of outstanding warehouse receipts by grade and grain. Similar records are maintained in the Eastern Division to provide totals of handlings and of outstanding warehouse receipts for use in connection with the annual audit of stocks of grain contained in these elevators as well as to provide a check on elevator records of registration and cancellation of warehouse and/or transfer receipts. A separate series of records was also maintained in both Divisions to provide a complete history of the registration and cancellation of all individual warehouse or transfer receipts, as issued by licensees and registered with the Board. In the Western Division, a detailed scrutiny of all stock adjustments, as reported daily by licensees, was maintained to ensure that the non-mixing provisions of the Canada Grain Act and provisions of Regulations issued by the Board were being complied with.

Licensees constantly require registration service to provide warehouse receipts of exact grade and quantity to cover sales of grain, stock adjustments, shipments, adjustment of storage dates, etc., and to that end service was provided for consolidation, splitting or re-issue of warehouse receipts as required.

Fees for registration service were charged at the rate of 4 cents per thousand bushels for registration and registration for cancellation in the Western Division and 1 cent per thousand bushels for similar types of service in the Eastern Division. Total fees collected for the period under review amounted to \$45,354.60 compared with \$49,710.12 in 1960-61 and \$51,420.22 for the 10-year average.

Table C-1.—Supply and Disposition of Canadian Grain, Crop Year 1961-62

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
Supply					
Carry-over July 31st, 1961.....	607,840,667	115,153,740	112,557,260	7,417,007	7,579,801
Production in 1961.....	283,394,000	283,965,000	112,640,000	6,519,000	14,318,000
Total Supply	891,234,667	399,118,740	225,197,260	13,936,007	21,897,801
Disposition					
Exported Overseas.....	353,185,213 ¹	1,727,983	26,929,002	4,153,403	11,987,594
Exported to U.S.A.....	1,487,496	950,663	9,726,103	209,099	—
Consumed in Canada ²	145,503,685	317,373,930	130,718,101	5,784,719	4,641,280
Total Disposition	500,176,394	320,052,576	167,373,206	10,147,221	16,628,874
Carry-Over (July 31st, 1962)					
On Farms (Estimated).....	59,170,000	56,900,000	26,280,000	1,190,000	1,320,000
In Country, Private Terminal and Mill Elevators.....	167,309,717	14,772,871	19,783,586	764,782	1,288,363
In Semi-Public Terminal Elevators.....	87,977,053	4,134,316	7,727,469	1,267,736	1,509,298
In Store at and Afloat to Eastern Elevators.....	60,527,320	2,526,611	2,871,995	316,357	833,430
In Eastern Flour Mills.....	2,295,557	372,235	3,477	—	—
In Transit by Rail—Eastern and Western Division.....	13,778,626	360,131	1,157,527	178,911	317,836
In Store and in Transit to the United States.....	—	—	—	71,000	—
Total in Store July 31st, 1962	391,058,273	79,066,164	57,824,054	3,788,786	5,268,927

¹Includes 31,920,584 bushels of wheat flour.

²Includes the following quantities subsequently exported in processed form:

Seed Wheat.....	3,239,957 bushels
Rolled Oats and Oatmeal.....	454,709 bushels
Barley Malt and Pot and Pearl Barley.....	6,253,958 bushels
Linseed Oil.....	463,363 bushels

**Table C-2.—Production and Producers' Marketings in Western Canada,
by Provinces, Crop Year 1961-62**

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
Production (DBS Estimate)					
Manitoba.....	34,000,000	24,000,000	9,000,000	886,000	4,300,000
Saskatchewan.....	137,000,000	19,000,000	20,000,000	1,650,000	5,600,000
Alberta and British Columbia.....	91,479,000	90,505,000	79,365,000	2,357,000	4,037,000
Totals.....	262,479,000	133,505,000	108,365,000	4,893,000	13,937,000
Producers' Marketings					
(a) At Country Elevators					
Manitoba.....	32,253,006	4,995,585	8,120,289	697,840	3,226,310
Saskatchewan.....	187,278,526	4,592,901	18,554,328	1,492,948	4,933,855
Alberta.....	83,022,934	18,072,956	32,311,131	1,219,474	3,632,552
Totals.....	302,554,466	27,661,442	58,985,748	3,410,262	11,792,717
(b) At Interior Semi-Public Terminals					
Manitoba.....	44,613	115,658	21,899	—	—
Saskatchewan.....	—	—	—	—	—
Alberta.....	—	—	—	—	—
Totals.....	44,613	115,658	21,899	—	—
(c) At Interior Private and Mill Elevators					
Manitoba.....	325,917	187,135	62,819	24	54,754
Saskatchewan.....	1,730,935	39,093	9,200	—	102,372
Alberta.....	657,712	140,794	209,932	4,043	30,210
Totals.....	2,714,564	367,022	281,951	4,067	187,336
(d) Loaded over Platforms					
Manitoba.....	2,683	3,670	2,231	—	3,303
Saskatchewan.....	8,718	—	—	3,100	1,521
Alberta.....	20,431	6,825	37,497	—	—
Totals.....	31,832	10,495	39,728	3,100	4,824
Total Producers' Marketings					
Manitoba.....	32,626,219	5,302,048	8,207,238	697,864	3,284,367
Saskatchewan.....	189,018,179	4,631,994	18,563,528	1,496,048	5,037,748
Alberta.....	83,701,077	18,220,575	32,558,560	1,223,517	3,662,762
Totals.....	305,345,475	28,154,617	59,329,326	3,417,429	11,984,877

Table C-3.—Receipts and Shipments of Canadian Grain at Terminal Elevators, Crop Year 1961-62

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
Fort William-Port Arthur					
Receipts.....	186,283,206	17,289,392	37,430,483	3,300,153	6,291,216
Shipments.....	180,103,195	18,464,387	40,811,696	4,105,055	7,817,125
Vancouver-New Westminster					
Receipts.....	147,128,964	132,301	12,732,012	1,031,739	5,482,940
Shipments.....	145,745,978	1,504,970	13,071,131	1,136,515	6,099,205
Victoria					
Receipts.....	5,112,392	1,775	—	—	—
Shipments.....	4,431,890	71,323	9,928	—	—
Prince Rupert					
Receipts.....	—	—	10,268,352	—	—
Shipments.....	—	—	10,531,314	—	—
Churchill					
Receipts.....	19,499,998	—	—	—	—
Shipments.....	19,246,408	213,162	—	—	—
Transcona					
Receipts.....	63,218	118,445	26,729	1,970	—
Shipments.....	345,806	72,415	28,441	1,970	—
Calgary					
Receipts.....	204,540	—	1,610,783	—	—
Shipments.....	261,775	2,306	1,712,726	—	—
Edmonton					
Receipts.....	217,651	110,794	143,720	—	18,128
Shipments.....	440,217	84,531	93,140	—	17,995
Lethbridge					
Receipts.....	—	—	—	—	—
Shipments.....	284,784	644	757	—	342
Moose Jaw					
Receipts.....	167,187	371,118	35,986	—	—
Shipments.....	2,076,747	208,389	—	—	—
Saskatoon					
Receipts.....	1,596,247	279,760	618,175	—	—
Shipments.....	1,769,526	241,948	618,175	—	95
Total Receipts.....	360,273,403	18,303,585	62,866,240	4,333,862	11,792,284
Total Shipments.....	354,706,326	20,864,075	66,877,308	5,243,540	13,934,762

Table C-4.—Shipments of Foreign Grain From Canadian Elevators into Canadian Consumer Channels, Crop Year 1961-62

From	United States Oats	United States Corn	United States Soybeans	United States Beans	United States Sorghums
	bu.	bu.	bu.	bu.	bu.
Eastern Elevators.....	4,198,054	20,225,813	2,188,427	897	29,324
Fort William-Port Arthur.....	—	—	—	—	—
Interior Terminals.....	—	—	—	—	—
Interior Private and Mill Elevators.....	—	370,054	—	—	—
Pacific Coast Terminals.....	—	4,818	—	—	—

Table C-5.—Primary Receipts and Shipments at Eastern Elevators, Crop Year 1961-62

	Receipts	Shipments
Canadian Grain	bu.	bu.
Wheat.....	175,224,740	191,671,853
Oats.....	17,349,863	18,487,943
Barley.....	19,806,634	21,885,124
Rye.....	3,150,396	3,175,522
Flaxseed.....	6,798,927	6,753,777
Corn.....	2,863,154	2,942,744
Buckwheat.....	49,386	58,674
Soybeans.....	4,049,194	3,996,069
Peas.....	130,503	130,503
Sample Grain (lbs.).....	22,149,430	21,589,645
United States Grain		
Wheat.....	20,536,967	19,993,973
Oats.....	5,698,358	4,439,378
Barley.....	4,321,474	4,307,005
Rye.....	467,835	467,787
Flaxseed.....	178,270	97,583
Corn.....	52,647,549	47,964,376
Soybeans.....	12,207,367	12,099,174
Beans.....	18,755	18,752
Australian Barley	1,186,979	1,186,979

Table C-6.—Supply and Disposition of Canadian Grain in United States Positions, Crop Year 1961-62

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
Supply					
In Store and in Transit U.S.A.....	—	—	—	—	—
Receipts direct from Canada.....	2,273,500	950,663	9,726,103	280,099	—
Total Supply	2,273,500	950,663	9,726,103	280,099	—
Disposition					
Exported.....	—	—	—	—	—
Returned to Canada.....	786,004	—	—	—	—
Used Domestically.....	1,487,496	950,663	9,726,103	209,099	—
Total Disposition	2,273,500	950,663	9,726,103	209,099	—
In Store and in Transit July 31, 1962.....	—	—	—	71,000	—

Table C-7.—Exports of Canadian Wheat, by Seaboard Sectors, by Months, Crop Year 1961-62

	Via Canadian Pacific Ports	Via Canadian St. Lawrence Ports	Via Canadian Atlantic Ports	Via Churchill	Via Fort William- Port Arthur Direct	United States ¹ Imports	Total All Wheat	Wheat Flour ²	Total Wheat and Wheat Flour
1961	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.
August.....	14,623,157	12,819,967	—	6,231,376	1,895,903	55,029	35,625,432	3,540,254	39,165,686
September.....	11,526,867	7,123,452	—	9,248,058	890,453	177,287	28,966,117	2,560,169	31,526,286
October.....	9,903,446	17,757,812	—	2,817,853	2,148,310	282,301	32,909,722	2,692,608	35,602,330
November.....	9,171,799	30,702,385	—	—	938,117	11,136	40,823,437	2,435,065	43,258,502
December.....	10,667,826	7,180,679	2,091,372	—	—	26,534	19,966,411	3,035,623	23,002,034
1962									
January.....	13,747,992	149,333	3,624,618	—	—	11,700	17,533,643	2,419,142	19,952,785
February.....	16,572,231	149,333	7,015,543	—	—	2,000	23,739,107	2,261,553	26,000,660
March.....	15,155,584	93,333	5,204,685	—	—	28,492	20,482,094	2,594,683	23,076,777
April.....	13,013,035	8,762,194	3,131,025	—	—	74,388	24,980,642	2,380,820	27,361,462
May.....	14,836,834	17,010,330	607,007	—	1,891,213	804,530	35,149,914	3,162,139	38,312,053
June.....	8,875,868	12,598,981	—	—	2,079,082	5,565	23,559,496	2,261,470	25,820,966
July.....	11,852,269	6,129,507	—	947,581	78,219	8,534	19,016,110	2,577,058	21,593,168
Total Crop Year 1961-62	149,946,908	120,477,306	21,674,250	19,244,868	9,921,297	1,487,496	322,752,125	31,920,584	354,672,709
Total Crop Year 1960-61	124,187,003	119,593,379	33,545,919	20,094,890	11,012,033	2,518,758	310,951,982	35,681,823³	346,633,805
5-Year Average 1956-57 to 1960-61	111,917,814	93,516,245	26,934,451	18,969,925	4,691,679	4,201,248	260,354,747⁴	36,739,424	297,094,171

¹Compiled from returns of Canadian elevator licensees and shippers and advice from American grain correspondents.²Canadian Customs returns converted to bushels—unadjusted for time lag.³Revised—adjusted to remove effect of time lag in reports made by the Customs.⁴Includes exports via U.S. Atlantic Ports (1956-57 and 1959-60).

Table C-8.—Overseas Exports of Canadian Grain, by Seaboard Sectors, by Grades, Crop Year 1961-62

Grades	Via Canadian Pacific Ports	Via Canadian St. Lawrence Ports ¹	Via Canadian Atlantic Ports	Via Churchill	Via Fort William- Port Arthur Direct	Total
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat—						
1 Manitoba Northern.....	15,692,299	11,320,390	1,662,806	490,976	806,886	29,973,357
2 Manitoba Northern.....	82,577,052	75,728,767	15,738,003	11,886,371	7,722,999	193,653,192
3 Manitoba Northern.....	37,319,234	22,838,183	3,492,021	5,768,391	1,155,078	70,572,907
4 Manitoba Northern.....	8,986,839	1,850,072	20,604	1,029,666	37,334	11,924,515
No. 5.....	2,378,022	227,294	—	—	—	2,605,316
No. 6.....	33,600	—	—	—	—	33,600
Other Red Spring Wheat.....	1,937,424	619,912	—	69,464	199,000	2,825,800
Garnet.....	392,447	—	—	—	—	392,447
Alberta Winter.....	629,991	—	—	—	—	629,991
Eastern.....	—	1,523,260	—	—	—	1,523,260
1 C.W. Amber Durum.....	—	2,249,569	361,254	—	—	2,610,823
2 C.W. Amber Durum.....	—	1,811,807	211,827	—	—	2,023,634
3 C.W. Amber Durum.....	—	875,472	8,429	—	—	883,901
Ex. 4 C.W. Amber Durum.....	—	841,875	140,074	—	—	981,949
4 C.W. Amber Durum.....	—	206,200	39,232	—	—	245,432
Other C.W. Amber Durum.....	—	384,505	—	—	—	384,505
Totals.....	149,946,908	120,477,306	21,674,250	19,244,868	9,921,297	321,264,629
Oats—						
Ex. 3 C.W.....	—	26,317	—	—	—	26,317
3 C.W.....	—	128,681	26,478	—	349,675	504,834
1 Feed.....	—	32,980	—	—	—	32,980
Mixed Feed.....	505,779	164,823	—	—	487,991	1,158,593
Eastern.....	—	5,259	—	—	—	5,259
Totals.....	505,779	358,060	26,478	—	837,666	1,727,983
Barley—						
3 C.W. Six Row.....	681,118	—	—	—	—	681,118
1 Feed.....	19,125,496	609,875	—	—	657,595	20,392,966
2 Feed.....	3,365,780	863,912	—	—	1,187,328	5,417,020
Other Western.....	—	75,833	—	—	362,065	437,898
Totals.....	23,172,394	1,549,620	—	—	2,206,988	26,929,002
Rye—						
2 C.W.....	1,098,359	1,884,076	—	—	963,278	3,945,713
3 C.W.....	—	80,000	—	—	127,690	207,690
Totals.....	1,098,359	1,964,076	—	—	1,090,968	4,153,403
Flaxseed—						
1 C.W.....	6,167,337	4,688,858	107,847	—	1,007,030	11,971,072
3 C.W.....	16,522	—	—	—	—	16,522
Totals.....	6,183,859	4,688,858	107,847	—	1,007,030	11,987,594

¹Includes clearances of oats and flaxseed direct overseas from Prescott and Toronto, respectively.

Table C-9.—Overseas Exports of Canadian Grain, by Ports, Crop Year 1961-62

Loaded at	Wheat (All varieties)	Oats	Barley	Rye	Flaxseed	Total All Grains
	bu.	bu.	bu.	bu.	bu.	bu.
Vancouver-New Westminster.....	145,520,324	505,779	12,604,331	1,098,359	6,183,859	165,912,652
Victoria.....	4,426,584	—	—	—	—	4,426,584
Prince Rupert.....	—	—	10,568,063	—	—	10,568,063
Churchill.....	19,244,868	—	—	—	—	19,244,868
Fort William-Port Arthur direct.....	9,921,297	837,666	2,206,988	1,090,968	1,007,030	15,063,949
Toronto.....	—	—	—	—	20,184	20,184
Prescott.....	—	60,463	—	—	—	60,463
Montreal.....	52,016,359	297,597	1,549,620	1,763,967	4,668,674	60,296,217
Sorel.....	23,601,893	—	—	200,109	—	23,802,002
Three Rivers.....	20,288,282	—	—	—	—	20,288,282
Quebec.....	11,255,334	—	—	—	—	11,255,334
Baie Comeau.....	13,315,438	—	—	—	—	13,315,438
Saint John.....	827,856	—	—	—	—	827,856
West Saint John.....	9,512,809	26,478	—	—	107,847	9,647,134
Halifax.....	11,333,585	—	—	—	—	11,333,585
Total—Canadian Ports	321,264,629	1,727,983	26,929,002	4,153,403	11,987,594	366,062,611
U.S.A. Ports.....	—	—	—	—	—	—
Totals to Overseas	321,264,629	1,727,983	26,929,002	4,153,403	11,987,594	366,062,611
Wheat Flour ¹	31,920,584	—	—	—	—	31,920,584
U.S.A. Imports ²	1,487,496	950,663	9,726,103	209,099	—	12,373,361
Grand Totals	354,672,709	2,678,646	36,655,105	4,362,502	11,987,594	410,356,556

¹Canadian Customs Returns—converted to bushels.²Compiled from returns of Canadian Elevator licensees and shippers and advice from American grain correspondents.

Table C-10.—Tough and Damp Grain Dried, by Storage Position, Crop Year 1961-62

	Artificial Drying			Natural Drying	Total
	Tough	Damp	Tough and Damp		
	bu.	bu.	bu.	bu.	bu.
Lakehead					
Wheat.....	—	27,512	27,512	881,858	909,370
Durum.....	—	—	—	18,551	18,551
Oats.....	—	—	—	220,373	220,373
Barley.....	—	60	60	313,174	313,234
Rye.....	—	—	—	18,412	18,412
Flaxseed.....	662	—	662	41,662	42,324
Totals.....	662	27,572	28,234	1,494,030	1,522,264
Pacific Coast					
Wheat.....	193,329	40,934	234,263	1,180,647	1,414,910
Oats.....	—	—	—	4,165	4,165
Barley.....	70,966	—	70,966	476,328	547,294
Rye.....	—	—	—	2,701	2,701
Flaxseed.....	—	—	—	18,134	18,134
Totals.....	264,295	40,934	305,229	1,681,975	1,987,204
Interior					
Wheat.....	—	—	—	354	354
Oats.....	—	—	—	—	—
Barley.....	—	—	—	1,074	1,074
Rye.....	—	—	—	—	—
Flaxseed.....	—	—	—	—	—
Totals.....	—	—	—	1,428	1,428
Churchill					
Wheat.....	—	—	—	99,101	99,101
Totals, All Positions.....	264,957	68,506	333,463	3,276,534	3,609,997

**Table C-11.—Weighted Average Lake Freight Rates on Canadian Grain from
Fort William-Port Arthur, Season of Navigation 1962**

Port of Discharge	Wheat	Oats	Barley	Rye	Flaxseed
		(cents per bushel)			
Georgian Bay Ports, Goderich, Sarnia and Walkerville.....	3.712	4.198	4.489	4.753	—
Port Colborne.....	5.478	5.849	6.226	5.361	—
Toronto.....	6.30	6.260	6.937	7.0	7.232
Kingston.....	6.25	6.0	7.25	—	—
Prescott.....	7.124	6.801	7.150	6.5	—
Montreal (Direct).....	11.561	9.162	10.825	10.799	11.332
Montreal via Bay Ports.....	—	—	—	10.25	—
Montreal via Port Colborne.....	13.326	—	11.0	11.5	—
Montreal via Kingston.....	12.310	9.761	11.596	—	14.0
Montreal via Prescott.....	13.395	10.0	12.5	—	—
Sorel (Direct).....	11.236	—	—	—	—
Sorel via Port Colborne.....	12.841	—	—	—	—
Sorel via Prescott.....	12.679	—	—	—	11.25
Three Rivers (Direct).....	11.30	9.108	9.803	—	11.0
Three Rivers via Bay Ports.....	14.0	—	—	—	—
Three Rivers via Toronto.....	14.0	—	—	—	—
Quebec (Direct).....	12.079	9.291	10.733	—	11.5
Quebec via Kingston.....	—	9.0	10.5	—	—
Quebec via Prescott.....	11.0	—	10.5	—	—
Baie Comeau (Direct).....	10.943	—	—	—	—
Halifax (Direct).....	15.356	12.983	15.683	—	—
Other Maritime Ports.....	35.585	—	30.976	—	—
Buffalo.....	8.0	6.236	6.5	6.5	—
Chicago.....	6.415	—	5.383	5.803	—
Duluth-Superior.....	6.0	—	5.0	—	—
Manitowoc.....	—	—	5.777	—	—
Milwaukee.....	—	—	5.929	—	—
Oswego.....	—	—	9.0	—	—

Note—Rates originally quoted in United States funds have been converted to Canadian currency at the prevailing rates of exchange.

Table C-12.—Excesses and Deficiencies in Specified Grades of Wheat Disclosed by Weighovers of Grain Stored in SEMI-PUBLIC TERMINAL Elevators, Crop Year 1961-62

Date of Weighover	Licensee	EXCESS					DEFICIENCY					
		No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 2 Canada Western Garnet
		bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.
	Fort William-Port Arthur											
Nov. 27-29, 1961.....	The Fort William Elevator Co. Ltd. "Empire"	—	—	—	—	—	—	28.5	35.1	2,817.6	—	—
Dec. 7-11, 1961.....	Lakehead Terminals Ltd.....	—	—	—	—	—	—	191.3	2,309.2	2,108.6	—	—
Jan. 15-22, 1962.....	Manitoba Pool Elevators Elevator No. 9.....	—	—	—	—	—	—	397.7	15,112.0	17,187.0	—	—
Dec. 18-22, 1961.....	National Grain Co. Ltd.....	—	—	—	—	—	—	2,301.2	21,950.0	6,525.1	—	—
Dec. 19-28, 1961.....	Saskatchewan Wheat Pool Elevator No. 4.....	—	—	—	—	—	—	10,119.2	12,809.8	6,121.7	—	—
Sept. 11-20, 1961.....	Elevator No. 5.....	—	—	—	—	—	—	645.9	10,909.7	24,304.1	—	—
Dec. 11-13, 1961.....	Elevator No. 6.....	—	—	—	—	—	30.9	6,756.9	6,634.5	1,012.9	—	—
Dec. 11-20, 1961.....	Searle Grain Co. Ltd.....	—	—	—	—	—	3,438.6	20,568.6	28,783.3	20,177.0	—	—
Oct. 10-17, 1961.....	Superior Elevator Co. Ltd.....	—	2,808.8	—	—	—	—	—	5,948.6	1,989.2	—	—
Dec. 14-22, 1961.....	United Grain Growers Ltd. Elevator Thunder Bay.....	—	—	—	—	—	—	726.1	234.8	1,024.5	—	—
June 18-22, 1962.....	Vancouver, B.C. Pacific Elevators Ltd. Elevator No. 2.....	—	—	—	—	—	—	330.7	64.2	3,264.0	—	—
Oct. 16-24, 1961.....	Churchill, Man. National Harbours Board.....	—	—	—	2,555.6	—	—	179.3	58,953.0	—	—	—

Table C-13.—Excesses and Deficiencies in Specified Grades of Wheat Disclosed by Weighovers of Grain Stored in PRIVATE TERMINAL Elevators, Crop Year 1961-62

	Excess bu.	Deficiency bu.
No. 1 Manitoba Hard.....	—	—
No. 1 Manitoba Northern.....	—	—
No. 2 Manitoba Northern.....	—	—
No. 3 Manitoba Northern.....	—	—
No. 1 Canada Western Garnet.....	—	—
No. 2 Canada Western Garnet.....	—	—

No wheat of the above grades was handled or in store in the following elevators:

Date of Weighover	Elevator Company	Location
February 23, 1962.....	Canada Malting Co. Ltd.....	Port Arthur, Ontario
January 4, 1962.....	National Grain Feed Mill.....	Fort William, Ontario

Table C-14.—Overages and Shortages Disclosed by Weighovers of Canada Western and Foreign Grain Stored in Eastern Elevators, Crop Year 1961-62

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1962			bu.	bu.
Mar. 5-13	Collingwood Collingwood Terminals Ltd.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... Canada Western Sample Grain..... Canada Western Screenings..... U.S.A. Oats.....	— 580.3 2,126.1 *4,890 — —	1,237.4 — — — *2,853 468.6
April 2-17	Goderich Goderich Elevator and Transit Co. Ltd.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... Canada Western Rye..... Canada Western Sample Grain..... Canada Western Screenings..... U.S.A. Oats..... U.S.A. Corn.....	— — — — *194,130 — — —	7,182.6 1,196.0 3,394.1 345.9 — *28,785 1,231.6 739.8
Feb. 12-22	Kingston Canada Steamship Lines Ltd.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... Canada Western Rye..... Canada Western Flaxseed..... U.S.A. Oats..... U.S.A. Rye..... U.S.A. Corn.....	— — — — — 6.5 — —	14,675.7 14.7 324.8 33.3 403.4 — 274.3 1,613.1
Feb. 26- Mar. 9	Humberstone Robin Hood Flour Mills Ltd.....	Canada Western Wheat..... Canada Western Barley.....	— —	20,044.5 51.3
June 6	Lakefield Lakefield Elevator Co..	Canada Western Wheat.....	—	3,680.7
July 13-26	Midland Canada Steamship Lines Ltd.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... U.S.A. Corn.....	— — 421.1 —	2,957.8 36.8 — 70.0
Feb. 26- Mar. 2	Montreal Federee Elevators Ltd...	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... Canada Western Sample Grain..... Canada Western Screenings..... U.S.A. Corn.....	— 44.3 — — — —	1,868.8 — 647.6 *15,040 *2,950 933.2
Feb. 1-14	Montreal National Harbours Board Elevators No. 1 and No. 2.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... Canada Western Rye..... Canada Western Flaxseed..... Canada Western Buckwheat..... Canada Western Peas..... Canada Western Sample Grain..... Canada Western Screenings..... U.S.A. Wheat..... U.S.A. Oats..... U.S.A. Corn..... U.S.A. Soybeans.....	— — — — — — — — — — — — —	10,176.3 2,514.7 2,930.6 600.6 1,304.7 93.7 20.3 *50 *28,385 1,642.9 45.7 4,693.6 663.9

*Pounds.

Table C-14.—Overages and Shortages Disclosed by Weighovers of Canada Western and Foreign Grain Stored in Eastern Elevators, Crop Year 1961-62—Continued

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1962			bu.	bu.
Jan. 18-31	Montreal			
	National Harbours Board Elevator No. 3.....	Canada Western Wheat.....	—	18,074.2
		Canada Western Oats.....	—	1,029.4
		Canada Western Barley.....	—	4,209.9
		Canada Western Rye.....	—	744.1
		Canada Western Flaxseed.....	—	599.2
		Canada Western Screenings.....	—	*2,525
		U.S.A. Wheat.....	—	3,068.5
		U.S.A. Flaxseed.....	—	412.4
		U.S.A. Corn.....	—	24,308.7
		U.S.A. Soybeans.....	—	1,522.3
Jan. 18-Feb. 8	Montreal			
	National Harbours Board Elevator "B".....	Canada Western Wheat.....	—	27,584.2
		Canada Western Oats.....	—	950.7
		Canada Western Barley.....	—	850.4
		Canada Western Rye.....	—	163.7
		Canada Western Flaxseed.....	—	128.7
		Canada Western Screenings.....	*590	—
		U.S.A. Wheat.....	—	629.0
		U.S.A. Barley.....	—	120.0
		U.S.A. Rye.....	—	112.0
		U.S.A. Corn.....	—	185.7
June 6	Peterborough			
	Quaker Oats Co. of Canada Ltd.....	Canada Western Wheat.....	—	479.5
July 10-12	Port Colborne			
	National Harbours Board.....	Canada Western Wheat.....	—	8,025.4
		Canada Western Oats.....	180.6	—
		Canada Western Barley.....	—	30.2
		Canada Western Rye.....	—	45.4
Feb. 16-27	Prescott			
	National Harbours Board.....	Canada Western Wheat.....	—	9,852.4
		Canada Western Oats.....	—	922.9
		Canada Western Barley.....	—	2,844.1
		Canada Western Rye.....	—	2.4
		Canada Western Mixed Grain.....	—	*7,410
		Canada Western Screenings.....	*2,500	—
		U.S.A. Oats.....	—	418.5
Mar. 1-13	Quebec			
	National Harbours Board.....	Canada Western Wheat.....	—	8,268.0
		Canada Western Oats.....	—	3,311.4
		Canada Western Barley.....	—	3,941.9
		Canada Western Rye.....	—	128.2
		Canada Western Mixed Grain.....	—	—
		Canada Western Screenings.....	—	*8,612
		U.S.A. Wheat.....	—	292.1
		U.S.A. Oats.....	—	128.1
		U.S.A. Soybeans.....	—	77.8
Feb. 12-23	Sorel			
	North American Elevators Ltd.....	Canada Western Wheat.....	—	23,409.9
		Canada Western Oats.....	—	39.1
		Canada Western Barley.....	—	125.9
		Canada Western Rye.....	—	125.0
		U.S.A. Wheat.....	—	303.9
		U.S.A. Corn.....	—	119.0
		U.S.A. Soybeans.....	—	500.3

*Pounds.

Table C-14.—Overages and Shortages Disclosed by Weighovers of Canada Western and Foreign Grain Stored in Eastern Elevators, Crop Year 1961-62—Concluded

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1962			bu.	bu.
June 6-8	Three Rivers Three Rivers Grain and Elevator Co. Ltd.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... Canada Western Flaxseed..... Canada Western Screenings..... U.S.A. Barley..... U.S.A. Soybeans..... Australian Barley.....	— — — — — — — —	54,329.6 1,864.2 2,476.1 113.7 *2,780 49.8 913.4 741.8
Mar. 14-30	Toronto Maple Leaf Mills Ltd.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... Canada Western Rye..... Canada Western Flaxseed..... U.S.A. Oats..... U.S.A. Flaxseed..... U.S.A. Corn..... U.S.A. Soybeans.....	— — — — — — — 1,299.4 —	2,451.5 116.6 368.2 23.0 495.3 3,317.4 206.1 — 997.1
Mar. 23-30	Walkerville Hiram Walker & Sons Grain Corp. Ltd.....	Canada Western Wheat..... Canada Western Rye.....	— —	1,959.6 86.8
May 11	Saint John Canadian National Railways.....	Canada Western Wheat.....	—	596.8
May 14-15	West Saint John Canadian Pacific Railway Elevator "B".....	Canada Western Wheat..... Canada Western Oats..... Canada Western Flaxseed.....	— — —	1,379.0 16.5 42.3
May 15-17	West Saint John Canadian Pacific Railway Elevator "H".....	Canada Western Wheat..... Canada Western Flaxseed..... Canada Western Buckwheat..... Canada Western Peas.....	— — — —	3,740.4 25.1 4.4 36.1
May 7-10	Halifax National Harbours Board.....	Canada Western Wheat..... Canada Western Oats..... Canada Western Barley..... Canada Western Flaxseed.....	— — — —	8,178.8 240.6 231.4 5.3

*Pounds.

Table C-15.—Amounts Collected and Grain Purchased under the One Per Cent Levy, Prairie Farm Assistance Act, Crop Year 1961-62

Province	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed	Total
	\$	\$	\$	\$	\$	\$	\$
Manitoba.....	586,823.13	34,555.70	70,172.99	7,628.34	90,367.72	6,368.27	795,916.15
Saskatchewan....	3,592,000.76	40,810.77	175,096.77	18,613.31	165,679.60	63,646.77	4,055,847.98
*Alberta.....	1,418,395.08	89,081.18	256,955.01	14,023.11	127,087.39	82,192.67	1,987,734.44
Totals.....	5,597,218.97	164,447.65	502,224.77	40,264.76	383,134.71	152,207.71	6,839,498.57
*Includes Peace River area in B.C.							
Penalties on late filing of returns.....							259.10
Total collections August 1, 1961 to July 31, 1962.....							6,839,757.67

	Grain Purchases						
	thousands of bushels						
Manitoba.....	32,362	4,791	8,052	776	3,095	521	49,597
Saskatchewan....	186,591	4,483	18,242	1,617	4,719	3,196	218,848
Alberta.....	81,835	16,386	30,660	1,256	3,595	4,025	137,757
Totals.....	300,788	25,660	56,954	3,649	11,409	7,742	406,202

Table C-16.—Licences in Force and Storage Capacity as at August 1, 1962, and a Year Ago

Kind of Licence	Licences in Force August 1		Licensed Storage Capacity August 1	
	1962	1961	1962	1961
Country Elevators.....	5,226	5,272	bu. 367,471,300	bu. 370,358,200
Supplementary Annexes to Country Elevators.....	—	*	—	4,604,900
Terminals and Mill Elevators.....	71	71	167,721,210	163,390,310
Eastern Elevators.....	30	32	108,575,300	110,955,300
Track Buyers, Commission Merchants and Grain Dealers.....	35	38	†	†
Totals.....	5,362	5,413	643,767,810	649,308,710

*96 Buildings as at August 1, 1961.

†These licences do not cover grain storage facilities.

**Table C-17.—Number and Kind of Licenses Issued and Licensed Storage Capacity,
as at December 1st each year for the Past Five Years**

Kind of Licence	1962	1961	1960	1959	1958
Number of Licences					
Public Country Elevator.....	5,214	5,261	5,293	5,304	5,314
Private Country Elevator.....	6	6	6	8	8
Mill Elevator.....	25	26	27	34	35
Semi-Public Terminal Elevator.....	40	40	40	40	40
Private Terminal Elevator.....	6	6	5	5	5
Eastern Elevator.....	31	32	32	31	31
Track Buyer.....	15	15	18	20	22
Commission Merchant.....	18	19	21	22	24
Grain Dealer.....	3	3	6	5	5
Totals.....	5,358	5,408	5,448	5,469	5,484
Licensed Capacity					
	thousands of bushels				
Public Country Elevator.....	368,252	371,222	366,636	380,838	373,357
Grain Storage Buildings.....	—	2,086	7,241	10,157	12,992
Private Country Elevator.....	157	149	156	232	240
Mill Elevator.....	12,791	12,709	12,794	13,637	13,671
Semi-Public Terminal Elevator.....	146,714	146,774	139,974	138,524	137,524
Private Terminal Elevator.....	8,217	8,217	7,720	7,070	7,070
Eastern Elevator.....	111,575	110,955	110,435	97,767	94,227
Totals.....	647,706	652,112	644,956	648,225	639,081

Table C-18.—Licensed Elevators and Storage as at December 1, 1962

Kind of Elevator	Ontario	Mani- toba	Saskat- chewan	Alberta	British Colum- bia	Quebec and Mari- times	Totals
Number of Elevators							
Public Country.....	3	680	2,875	1,637	19	—	5,214
Private Country.....	—	2	1	3	—	—	6
Mill.....	3	7	5	9	1	—	25
Semi-Public Terminal.....	24	2	2	3	9	—	40
Private Terminal.....	2	2	—	2	—	—	6
Eastern.....	18	—	—	—	—	13	31
Totals.....	50	693	2,883	1,654	29	13	5,322
Storage Capacity							
	thousands of bushels						
Public Country.....	1,460	47,457	193,429	123,805	2,101	—	368,252
Private Country.....	—	45	25	87	—	—	157
Mill.....	1,480	2,234	4,942	4,117	18	—	12,791
Semi-Public Terminal.....	98,767	6,000	11,000	6,100	24,847	—	146,714
Private Terminal.....	2,974	3,603	—	1,640	—	—	8,217
Eastern.....	56,666	—	—	—	—	54,909	111,575
Totals.....	161,347	59,339	209,396	135,749	26,966	54,909	647,706

Table C-19.—Warehouse Receipt Registrations for Primary and Transfer Receipts and Shipments at Semi-Public Terminal Elevators and Eastern Elevators, by Area and Grain, Crop Year 1961-62 and 10-Year Average

Area	Grain	Crop Year 1961-62		10-Year Average, 1951-52 to 1960-61	
		Registered	Registered for Can- cellation	Registered	Registered for Can- cellation
			thousands	of bushels	
Western Division— Winnipeg, including Lakehead and Churchill	Wheat.....	206,089	199,653	216,561	213,716
	Oats.....	17,173	18,669	58,422	61,144
	Barley.....	31,266	35,323	76,126	76,393
	Flax.....	6,292	7,821	10,281	9,993
	Rye.....	3,311	4,113	8,535	8,377
	Mixed Grain.....	111	180	609	420
	Corn.....	—	—	5	6
	Others.....	62	—	175	187
Interior Elevators— Calgary, Edmonton, Lethbridge, Moose Jaw, Saskatoon and Transcona	Wheat.....	2,249	5,179	5,401	5,297
	Oats.....	880	610	320	349
	Barley.....	2,435	2,453	1,587	1,540
	Flax.....	18	18	193	193
	Rye.....	2	2	28	31
	Mixed Grain.....	2	15	2	26
	Corn.....	10	7	12	9
	Others.....	2,259	1,787	1,982	1,785
Vancouver and Prince Rupert Area	Wheat.....	152,511	150,453	108,092	107,331
	Oats.....	175	1,605	2,423	3,370
	Barley.....	23,005	23,619	23,580	23,516
	Flax.....	5,483	6,100	3,239	3,143
	Rye.....	1,034	1,157	363	345
	Mixed Grain.....	17	88	27	44
	Corn.....	4	5	6	267
	Others.....	7,830	7,141	2,810	2,790
Western Division— All Points	Wheat.....	360,849	355,285	330,054	326,344
	Oats.....	18,228	20,884	61,165	64,863
	Barley.....	56,706	61,395	101,293	101,449
	Flax.....	11,793	13,939	13,713	13,329
	Rye.....	4,347	5,272	8,926	8,753
	Mixed Grain.....	130	283	638	490
	Corn.....	14	12	23	282
	Others.....	10,151	8,928	4,967	4,762
Totals—All Grains.....		462,218	465,998	520,779	520,272
Eastern Division—	Wheat.....	263,612	278,856	313,988	308,380
	Oats.....	24,920	24,905	42,894	42,838
	Barley.....	26,921	29,024	83,408	83,591
	Flax.....	7,376	7,196	18,528	18,531
	Rye.....	3,670	3,713	6,219	6,244
	Mixed Grain.....	539	528	463	435
	Corn.....	57,245	52,926	17,493	17,259
	Screenings.....	1,952	1,614	1,795	1,790
	Peas.....	131	131	139	139
	Soybeans.....	18,548	18,638	6,062	5,946
	Buckwheat.....	49	59	335	335
	Others.....	19	19	499	499
Totals—All Grains.....		404,982	417,609	491,823	485,987

APPENDIX D

Inspection Branch

M. J. CONACHER, *Chief Grain Inspector*

Under Section 32 of the Canada Grain Act, the Grain Inspection Branch in the Western Division establishes grades on carlots of grain on samples drawn during unloading by officials of the Inspection Branch at the Lakehead, Pacific Coast, Churchill, Winnipeg, Calgary, Edmonton, Moose Jaw, Saskatoon, Lethbridge, Medicine Hat and Keewatin. Also, all grain shipped from terminal and mill elevators is officially sampled and inspected. At the primary inspection points of Winnipeg, Calgary and Edmonton, samples placed in railway cars by country elevator agents are removed and graded; while this service does not provide official grades of these shipments, the grades established on the unofficial samples are used by the shippers and terminal operators as a guide to their delivery and handling of the grain.

In the Eastern Division, sampling and grading service is provided on request at Chatham and Toronto for Eastern grown grain. At Montreal, Quebec, Sorel, Three Rivers, Baie Comeau, St. John and Halifax, grain loaded into vessels for export is sampled and reviewed with respect to grade.

Grades of all grain in store in all terminal and eastern elevators weighed over during the crop year are verified by officials of the Inspection Branch.

Under Sections 26, 28 and 31 of the Canada Grain Act, the Board holds the Chief Grain Inspector responsible for the collection of samples of grain of the current crop year's crops of western and eastern grain, and from such samples to prepare tentative standard and standard export samples of statutory and commercial grades for submission to the committees on grain standards. The Inspection Branch of the Board also handles the distribution of the standard and standard export samples.

Crop Conditions and Grades, 1961, Western Division

In 1961, Western Canada produced the lowest average yields of grain, but the highest average quality, for many years. After the dry summer and fall of 1960, subsoil moisture reserves were extremely low. In the spring of 1961, unusually low temperatures, high winds and widespread rain and snow retarded field operations over the Prairies generally. Then the weather turned hot in May, and following a period of rapid growth, the lack of reserve soil moisture began to take effect. Only central and northern Alberta received adequate rainfall through the growing period.

Limited moisture through the summer matured crops early, and harvest weather was exceptionally good, so wheat was high in quality and low in moisture content over most of the Prairies. 91.9% of shipments of red spring wheat were No. 3 Manitoba Northern or higher grade; shipments of No. 1 Manitoba Northern, 21.4%, were the highest since the crop of 1948. Similarly, amber durum wheat was exceptionally high in quality; the figure of 46.2% No. 1 Canada Western Amber Durum is the highest since the crop of 1934.

Barley suffered more from drought in some districts than did wheat, through the summer of 1961. Thin kernels caused much degrading to "feed" grades; only 27% of shipments qualified for malting and pearling grades, compared with the ten-year average of over 40%.

The fine weather for ripening and harvesting produced the best average quality of oats since 1936; 46.5% of shipments qualified for grades of No. 3 Canada Western or higher.

The quality of flaxseed in 1961 was particularly good; a new high all-time record of 97.6% of shipments graded No. 1 Canada Western. Relatively low incidence of ergot in rye, attributed to dry weather in early summer, contributed to 79.5% of this grain grading No. 1 and No. 2 C.W., the highest proportion since the crop of 1920.

Carlot inspections of rapeseed in the 1961-62 crop year declined to 5,086 from the previous high of 6,668 in the 1960-61 crop year. Carlot inspections of domestic mustard seed totalled only 184, or just over one-third of the record high set in the preceding year.

Crop Conditions and Grades, 1961, Eastern Division

For the second successive year, Eastern Canada had a wet, cold spring and consequent sowing of spring crops was late in many districts. Following good weather in June, bumper crops were being forecast. Then in July rains retarded the harvesting and reduced the average quality of the early crops such as winter wheat and coarse grains. The later crops, including corn, soybeans and buckwheat, produced fairly high yields and better than average grades.

Forty-two per cent of carlots of wheat were graded No. 1 or No. 2 Canada Eastern Winter; 37.8% of the wheat shipments were graded Tough or Damp. The predominating grade of barley and oats inspected was No. 4 Canada Eastern (47% and 31% of cars, respectively).

Fifty-nine per cent of the corn inspected in carlots was No. 1 or No. 2 Canada Eastern, dry or extra dry; 32% of the cars inspected contained excessive moisture for straight (dry) grades.

The predominating grade of soybeans was No. 2 Canada Yellow (75%); 89% of the edible beans inspected in carlots were graded No. 1 or Extra No. 1 Canada Eastern Pea Beans.

Samples Submitted for Grading

Eleven thousand five hundred and forty-three samples submitted by country elevator operators and farmers, "subject to inspector's grade and dockage," were graded during the 1961-62 crop year, compared with 16,283 samples during the previous crop year.

The increased incidence of No. 1 grades undoubtedly contributed to the reduction in number of samples submitted.

Farmers' Complaints and Inquiries on Carlot Shipments

During the crop year 1961-62, the Inspection Branch received 39 requests from farmers to establish whether the identity of special bin grain had been preserved in the handling through country elevators. In 16 instances it was established that the identity of the farmers' grain had not been preserved.

Statutory Grades, Rapeseed and Domestic Mustard Seed

With the greatly increased production of rapeseed and domestic mustard seed in recent years, it became apparent that a comprehensive range of statutory grades should be established for these two oil seeds. It had become clear through reactions of the trade, that the two statutory grades of rapeseed required to be expanded into a range of three numerical grades with more specific definitions, and that the "commercial" grades of domestic mustard seed should be revised and made statutory.

The initial approach to this matter in Parliament was made in the form of a private member's bill, presented by Mr. Reynold Rapp (Humboldt-Melfort-Tisdale). After this bill was given first reading the Board consulted the trade at large that are concerned with the handling and marketing of these oilseeds, and, taking into account the advice of these people, submitted to the Minister proposals for definitions of grades; these were passed as amendments to the Canada Grain Act. The new grades for domestic mustard seed became effective on April 19, 1962, and those for rapeseed on August 1, 1962.

A serious shortcoming in the previous definitions of grades of these seeds was the lack of reference to admixtures of other seeds, such as wild mustard seeds, that are relatively inconspicuous in these domestic seeds and present problems in practical grading due to the time required for analyses of samples. Arrangements were made with the Plant Products Division of the Department to analyze samples submitted by the Board's Inspection Branch and issue Seed Analyses Certificates to be used in conjunction with certificates of grade; also, grain inspectors of the Board receive instruction in this work from seed analysts of Plant Products Division, with a view to the Inspection Branch eventually being able to perform the analyses and issue the supplementary certificates.

Preparation of Standard Samples

During the 1961 harvest period a total of 753 samples of Western grain were collected by the Inspection Branch for the preparation of the tentative standard and export standard samples. From these, a total of 41 tentative samples were prepared; the Committee on Western Grain Standards established 29 of these as standard samples of statutory grades; 2 as standard samples of commercial grades, and 10 as export standard samples. Distribution of these standard and standard export samples was made to some 140 organizations or individuals in 41 countries, over and above the distribution within the Board of Grain Commissioners' own organization.

Grading of Barley

The effects of changes made in the grading of barley, from August 1, 1960, were reviewed by the Board in the spring of 1962, in consultation with the trade who are directly concerned with the quality of malting grades of barley. There was general agreement on two important items: (1) that the problem of progressive peeling and breaking of barley in handling at various levels, from the farm through to export, has not changed in recent years, and (2) the introduction of sizing specifications into the interpretation of definitions of grades effected significant improvement in the average quality of these grades.

It was felt that the improvement in general quality through sizing specifications had been so marked that there was some justification for reducing the quality slightly, by increasing the tolerance of peeled and broken kernels. Consequently, an increase of 1% of peeled and broken kernels was permitted in the grades of No. 3 C.W. Barley, both Six-Row and Two-Row; this became effective on August 1, 1962. So far, there has been no serious objection raised to this change, by maltsters in Canada or elsewhere, so it appears that it was realistic.

On the subject of peeled and broken barley there is one note of encouragement. The plant breeders have taken serious account of the relative hull adherence of new varieties that are under study, and there is some promise of success in breeding and developing varieties of barley that are good agronomically and high in malting quality, with better hull adherence incorporated.

Collaboration with U.S.A. Grain Inspection Service

The Inspection staff of the Board of Grain Commissioners continued providing sampling service for the U.S. Department of Agriculture, on United States grain handled through the licensed elevators in the St. Lawrence; official samples have been turned over to United States inspectors for grading and issuance of grading documentation.

During the 1961-62 crop year, this sampling service included 3,496,940 bushels received into Canadian elevators from 25 vessels, and 53,525,115 bushels loaded at these elevators to 211 vessels. In addition, 565 carlots of U.S. grain were sampled in the Montreal area by the Board's Inspection staff, as well as bin lots totalling 479,166 bushels.

During the 1961-62 crop year, 25,246 bushels of U.S. grain were received into, and 16,718 bushels were shipped out of, terminal elevators at Pacific ports. This grain was sampled and checked by the Board's Inspection Branch, with official samples being provided to exporters and others, on request.

Collaborative Studies of New Varieties

The Inspection Branch has continued to provide a special service to plant breeders of the Department of Agriculture and to the Associate Committee on Grain Research of the National Research Council, by examining and reporting on the kernel characteristics of new varieties and hybrids of wheat and barley.

Preliminary reports are made directly to plant breeders on new varieties in their earliest stages of development. These reports point out the desirable and undesirable kernel characteristics of samples.

At this stage of development and on request of the plant breeder, the Inspection Branch may make kernel selections from individual line samples to eliminate undesirable kernel types. This service is proving to be extremely valuable to the plant breeders in their development programs.

In the final stages of development of each new variety, a detailed description of the kernel characteristics is given to the plant breeders and the Associate Committee on Grain Research. This report is an important factor when a variety is being considered for licensing.

In 1962, over 2,500 samples representing more than two hundred new varieties and hybrids and selected lines of established varieties were examined and reported on.

Publication — Official Grain Grading Guide

In 1961, the Board authorized the Inspection Branch to release a publication entitled "The Official Canadian Grain Grading Guide." This has replaced a collection of "Inspection Branch Circulars" that were issued through four decades with many amendments and supplements; consolidation was obviously needed. Information contained in the old circulars, that was of little or no interest to people outside of the Inspection Branch, was omitted from the Grading Guide; additional instructions pertaining to internal routines were consolidated in a separate Grain Inspectors' Manual. Distribution of the latter has been limited to staff of the Board and to others who are directly engaged in work related to the inspection of grain.

The Official Grading Guide, which is complementary to the Canada Grain Act and Regulations of the Board, has been widely distributed and well received

in the grain trade in Canada and abroad. Demand for it has increased steadily; starting with the original printing of 800 copies in 1961, there have been five printings totalling 2,500 copies, including the revised edition of 1962.

Staff Training

Staff training has now become a permanent and integral part of Inspection Branch procedures. This is necessary on account of the continuing introduction of new varieties of grain in Canada, new equipment required for Inspection Branch work, and changes and improvements in grading techniques.

The staff training program is conducted under the direction of a Special Assistant to the Chief Grain Inspector at head office. A senior inspector at each field office acts as local staff training officer; he handles the local program and reports directly to head office.

A new and comprehensive staff training handbook was prepared and printed in 1962. This has been distributed to all Inspectors and Inspection Assistants for study.

Examinations are conducted annually in the form of written tests, tests in identification of variety, and grading tests. Those who obtain pass marks in all three types of tests receive certificates of which they are justifiably proud.

This program is in its fourth year and the interest in self-improvement which it has created can be evaluated by the fact that the mean average of the marks obtained by all participants has increased by twenty per cent since its inception. There is no doubt that it is a valuable asset to Inspection Branch operations because of increased efficiency of staff and because it provides management with this means of measuring the abilities of individual employees.

Foreign Visits and Visitors

During the calendar year 1962, as usual, hundreds of people visited the Inspection Branch, including 80 people from 29 different foreign countries. A total of 12 foreign missions or delegations visited head office of the Branch in Winnipeg.

In May, 1962, the Chief Grain Inspector attended a conference of Chief Grain Inspectors from various parts of the United States. It is considered extremely important to keep in close touch with developments in the United States with regard to the grading of grain, in view of the current evidence of prospective changes in the grading of grain in the United States. Further, in view of the collaboration of the Canadian Inspection Service with the United States service in the St. Lawrence, where the official sampling of United States grain is done by Canadian officials, considerable value is attached to continued close liaison with the American inspection authorities; items of mutual concern such as the overlapping of services can be best dealt with through direct personal contact.

In the fall of 1962, the Chief Grain Inspector went to Great Falls, Montana, to consult with the Chief Grain Inspector for that State, on the grading of domestic mustard seed. In view of the fact that the new statutory definitions of Canadian grades of mustard seed have been patterned very closely after the Montana grades, and considering the fact that Canadian and Montana grown mustard seed enters into the same trade channels, the intention of both sides is to adhere quite closely to the same grading levels. The visit proved of real value to both sides. We should be remiss if we did not compliment Mr. G. F. Angermeier, Chief of the Montana State Inspection Service, who is acknowledged to be a real authority on this subject, on the information and guidance that he gave us.

WESTERN DIVISION

Table D-1.—Carlot Inspections by Points, Crop Year 1961-62, compared with 1960-61

	1961-62	1960-61	1961-62	1960-61
			percent of total	
Fort William.....	128,655	165,377	48.0	57.1
Winnipeg.....	9,688	10,798	3.6	3.9
Churchill.....	10,005	9,607	3.7	4.5
Moose Jaw.....	3,185	3,681	1.2	1.1
Saskatoon.....	7,369	7,850	2.8	2.8
Calgary.....	4,780	5,150	1.8	2.0
Edmonton.....	1,187	1,429	0.4	0.7
Medicine Hat.....	2,180	2,555	0.8	0.9
Lethbridge.....	185	576	0.1	0.1
Prince Rupert.....	4,681	4,526	1.8	1.6
Vancouver.....	96,084	85,240	35.8	25.3
Totals.....	267,999	296,789	100.0	100.0

Table D-2.—Carlot Inspections, Crop Year 1961-62

Grade	Carlots	Percentage	Percentage of Total Wheat Inspected
WHEAT			
1 Hard.....	66	*	—
1 Manitoba Northern.....	43,807	21.4	—
2 Manitoba Northern.....	111,131	54.3	—
3 Manitoba Northern.....	32,991	16.2	—
4 Manitoba Northern.....	7,202	3.5	—
No. 4 Special.....	52	*	—
No. 5.....	1,475	0.7	—
No. 6.....	387	0.2	—
Feed.....	9	*	—
Garnet.....	462	0.2	—
Tough.....	1,017	0.5	—
Damp.....	3	*	—
Smutty.....	87	*	—
Rejected.....	5,663	2.8	—
Others Red Spring.....	397	0.2	—
Total Red Spring Wheat.....	204,749	100.0	97.2
1 Canada Western Amber Durum.....	2,303	46.2	—
2 Canada Western Amber Durum.....	1,297	26.0	—
3 Canada Western Amber Durum.....	486	9.8	—
Extra 4 Canada Western Amber Durum.....	690	13.9	—
4 Canada Western Amber Durum.....	97	1.9	—
5 Canada Western Amber Durum.....	8	0.2	—
6 Canada Western Amber Durum.....	2	*	—
Tough Durum.....	11	0.2	—
Others Durum.....	91	1.8	—
Total Amber Durum Wheat.....	4,985	100.0	2.4
Total Soft White Spring Wheat.....	151	—	0.1
Total Mixed Wheat.....	67	—	*
Total Alberta Winter Wheat.....	716	—	0.3
Total All Wheats.....	210,668	—	100.0

Table D-2.—Carlot Inspections, Crop Year 1961-62—Continued

Grade	Carlots	Percentage
OATS		
1 Canada Western.....	2	*
2 Canada Western.....	66	0.8
Extra 3 Canada Western.....	366	4.6
3 Canada Western.....	2,047	25.8
Extra 1 Feed.....	1,216	15.3
1 Feed.....	3,665	46.2
2 Feed.....	310	3.9
3 Feed.....	35	0.4
Mixed Feed.....	52	0.7
Tough.....	116	1.5
Damp.....	2	*
Rejected.....	20	0.3
Others.....	37	0.5
Total Oats.....	7,934	100.0
BARLEY		
1 Canada Western Six Row.....	1	*
2 Canada Western Six Row.....	464	1.4
3 Canada Western Six Row.....	7,697	23.3
4 Canada Western Six Row.....		
1 Canada Western Two Row.....	11	*
2 Canada Western Two Row.....	177	0.5
3 Canada Western Two Row.....	580	1.8
1 Feed.....	19,712	60.0
2 Feed.....	2,972	9.5
3 Feed.....	377	1.1
Tough.....	540	1.6
Damp.....	8	*
Rejected.....	261	0.7
Others.....	42	0.1
Total Barley.....	32,842	100.0
RYE		
1 Canada Western.....	72	2.9
2 Canada Western.....	1,931	76.6
3 Canada Western.....	407	16.1
4 Canada Western.....	76	3.0
Ergoty.....	15	0.6
Tough.....	14	0.6
Damp.....	1	*
Rejected.....	6	0.2
Total Rye.....	2,522	100.0
FLAXSEED		
1 Canada Western.....	7,340	97.6
2 Canada Western.....	58	0.8
3 Canada Western.....	54	0.7
4 Canada Western.....	4	*
Tough.....	43	0.6
Damp.....	1	*
Rejected.....	12	0.2
Others.....	6	0.1
Total Flaxseed.....	7,518	100.0

Table D-2.—Carlot Inspections, Crop Year 1961-62—Concluded

Grade	Carlots	Percentage
Corn.....	114	—
Mixed Grain.....	114	—
Screenings.....	868	—
Buckwheat.....	1	—
Peas.....	10	—
Rapeseed.....	5,086	—
Sample Grain.....	109	—
Safflower Seed.....	2	—
Mustard Seed.....	184	—
Sorghum (U.S.A. Origin).....	9	—
Condemned Grain.....	18	—
Grand Total.....	267,999	—

*Less than 0.05%.

Table D-3.—Carlots of Tough, Damp and Straight Grain Inspected, Crop Year 1961-62

Grain	Tough	Damp	Tough and Damp	Straight	Total
Wheat.....	1,028	3	1,031	209,637	210,668
Oats.....	116	2	118	7,816	7,934
Barley.....	540	8	548	32,294	32,842
Rye.....	14	1	15	2,507	2,522
Flaxseed.....	43	1	44	7,474	7,518
Totals.....	1,741	15	1,756	259,728	261,484
Others.....	—	—	—	—	6,515**
All Grains.....	—	—	—	—	267,999
Percentage of Total					
Wheat.....	0.5	*	0.5	99.5	100.0
Oats.....	1.5	*	1.5	98.5	100.0
Barley.....	1.6	*	1.6	98.4	100.0
Rye.....	0.6	*	0.6	99.4	100.0
Flaxseed.....	0.6	*	0.6	99.4	100.0
Principal Grains.....	0.7	*	0.7	99.3	100.0
Others.....	—	—	—	—	100.0**

*Less than 0.05%.

**Details not available.

Table D-4.—Number of Two-Pound Samples “Subject to Grade and Dockage” Inspected, Crop Year 1961-62 compared with Crop Year 1960-61

Point	1961-62	1960-61
Number of Samples		
Winnipeg.....	5,702	10,026
Calgary.....	1,289	1,779
Edmonton.....	2,240	2,341
Moose Jaw.....	32	52
Saskatoon.....	116	298
Lethbridge.....	2,164	1,787
Totals.....	11,543	16,233

Table D-5.—Carlots Re-Inspected, Crop Year 1961-62

Point	In-spected	Re-In-spected	Un-Changed	Grades Raised	Grades Lowered	Dockage Raised	Dockage Lowered
Fort William.....	128,655	11,185	9,781	1,288	19	16	81
Winnipeg.....	9,688	1,261	822	366	29	5	39
Churchill.....	10,005	253	213	40	—	—	—
Moose Jaw.....	3,185	321	300	19	2	—	—
Saskatoon.....	7,369	1,038	960	70	7	1	—
Calgary.....	4,780	346	289	50	2	—	5
Edmonton.....	1,187	86	73	7	—	—	6
Medicine Hat.....	2,180	160	128	18	14	—	—
Lethbridge.....	185	1	1	—	—	—	—
Prince Rupert.....	4,681	4	3	1	—	—	—
Vancouver.....	96,084	10,591	9,488	1,025	26	5	47
Totals.....	267,999	25,246	22,058	2,884	99	27	178
Percentage of Total Cars.....	100.00	9.42	8.23	1.08	0.04	0.01	0.06
Percentage of Re-Inspections							
Fort William.....	—	100.0	87.4	11.5	0.2	0.1	0.8
Winnipeg.....	—	100.0	65.2	29.0	2.3	0.4	3.1
Churchill.....	—	100.0	84.2	15.8	—	—	—
Moose Jaw.....	—	100.0	93.5	5.9	0.6	—	—
Saskatoon.....	—	100.0	92.5	6.8	0.7	*	—
Calgary.....	—	100.0	83.5	14.4	0.6	—	1.5
Edmonton.....	—	100.0	84.9	8.1	—	—	7.0
Medicine Hat.....	—	100.0	80.0	11.2	8.8	—	—
Lethbridge.....	—	100.0	100.0	—	—	—	—
Prince Rupert.....	—	100.0	75.0	25.0	—	—	—
Vancouver.....	—	100.0	89.6	9.7	0.3	*	0.4
Totals.....	—	100.0	87.3	11.4	0.4	0.2	0.7

*Less than 0.05%.

Table D-6.—Summary of Carlot Inspections Appealed, Crop Year 1961-62

Item	Winnipeg		*Edmonton		Calgary		Total	
	Cars	Percent	Cars	Percent	Cars	Percent	Cars	Percent
Left as Graded.....	458	94.8	57	98.3	444	89.0	959	92.2
Grades Raised.....	24	5.0	1	1.7	47	9.4	72	6.9
Grades Lowered.....	1	0.2	—	—	8	1.6	9	0.9
Totals.....	483	100.0	58	100.0	499	100.0	1,040	100.0
Total Cars Inspected.....							267,999	100.0
Total Appeals.....							1,040	0.4
Total Grades Changed.....							81	0.03

*Edmonton Appeal Tribunal Office closed October 13, 1961.

Table D-7.—Vessel Shipments Inspected, Crop Year 1961-62

Grain	Fort William and Port Arthur	Vancouver	Victoria	Prince Rupert	Churchill	Total
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat.....	180,018,908	144,176,888	4,426,584	—	18,663,228	347,285,608
Oats.....	17,305,833	446,828	—	—	182,523	17,935,184
Barley.....	35,361,754	14,290,194	—	10,531,313	—	60,183,261
Rye.....	4,072,307	1,100,929	—	—	—	5,173,236
Flaxseed.....	7,868,133	6,183,859	—	—	—	14,051,992
Buckwheat.....	—	—	—	—	—	—
*Sample Grain.....	358,769	—	—	—	—	358,769
*Screenings.....	3,091,376	59,849	—	—	120,000	3,271,225
*Canada Rapeseed.....	—	6,379,323	537,535	—	—	6,916,858
*Mustard Seed.....	—	314,638	—	—	—	314,638
*Mustard Seed (U.S.A. Origin).....	—	11,900	—	—	—	11,900
**Safflower Seed.....	—	4,710	—	—	—	4,710
Totals.....	248,077,080	172,969,118	4,964,119	10,531,313	18,965,751	455,507,381

*In bushels of 50 lbs.

**In bushels of 45 lbs.

Table D-8.— Carlot Shipmentsex Terminal and Mill Elevators Inspected, Crop Year 1961-62

Grain	Winnipeg	Fort William and Port Arthur	Calgary	Edmonton	Moose Jaw
Wheat.....	271	367	136	241	1,105
Oats.....	226	592	12	49	110
Barley.....	317	294	975	46	—
Flaxseed.....	7	60	—	9	14
Rye.....	1	31	1	—	—
Mixed Grain.....	16	—	—	—	4
Corn.....	1	—	—	—	—
Buckwheat.....	—	—	—	—	—
Peas.....	15	—	—	—	—
Screenings.....	430	2,904	186	67	80
Rapeseed.....	—	2	72	389	3
Sample Feed Grain.....	28	—	—	—	—
Mustard Seed.....	1	—	—	—	—
Sample Grain.....	—	27	21	—	13
Oats Groats.....	—	—	—	—	—
Totals.....	1,313	4,277	1,403	801	1,329
	Saskatoon	Lethbridge	Medicine Hat	Vancouver, Victoria and Prince Rupert	Churchill
Wheat.....	921	137	—	223	—
Oats.....	127	—	—	283	6
Barley.....	288	—	—	73	—
Flaxseed.....	—	—	5	1	—
Rye.....	—	—	—	26	—
Mixed Grain.....	—	—	—	4	—
Corn.....	—	—	—	2	—
Buckwheat.....	—	—	—	—	—
Peas.....	—	—	—	—	—
Screenings.....	425	—	26	2,219	6
Rapeseed.....	365	—	—	1	—
Sample Feed Grain.....	—	—	—	28	—
Mustard Seed.....	—	1	—	4	—
Safflower Seed.....	—	—	—	—	—
Sample Grain.....	4	—	—	—	—
Totals.....	2,130	138	31	2,864	12

EASTERN DIVISION

Table D-9.—Carlot Inspections Eastern Grain, Crop Year 1961-62, by Grains and Points

Grain	Montreal	Toronto	Chatham	Total
Wheat.....	—	496	3,697	4,193
Oats.....	—	3	32	35
Barley.....	—	12	86	98
Rye.....	—	12	9	21
Buckwheat.....	—	—	6	6
Corn.....	3	—	1,052	1,055
Beans.....	—	—	410	410
Soybeans.....	—	8	1,817	1,855
Flaxseed.....	—	5	—	5
Totals	3	566	7,109	7,678

Table D-10.—Carlot Inspections Eastern Grain, Crop Year 1961-62, by Grains, Grades and Points

Grade	Montreal	Toronto	Chatham	Total
WHEAT				
1 Canada Eastern White Winter.....	—	6	182	188
2 Canada Eastern White Winter.....	—	81	1,419	1,500
3 Canada Eastern White Winter.....	—	12	389	401
4 Canada Eastern White Winter.....	—	—	81	81
5 Canada Eastern White Winter.....	—	—	31	31
1 Canada Eastern Mixed Winter.....	—	—	10	10
2 Canada Eastern Mixed Winter.....	—	1	79	80
3 Canada Eastern Mixed Winter.....	—	—	29	29
4 Canada Eastern Mixed Winter.....	—	—	1	1
5 Canada Eastern Mixed Winter.....	—	—	1	1
6 Canada Eastern Winter.....	—	—	51	51
Tough.....	—	348	1,203	1,551
Smutty.....	—	—	1	1
Weevilly.....	—	37	4	41
Damp.....	—	—	36	36
Sample.....	—	11	180	191
Totals	—	496	3,697	4,193
OATS				
2 Canada Eastern White.....	—	—	3	3
3 Canada Eastern.....	—	—	7	7
4 Canada Eastern.....	—	—	15	15
Tough.....	—	2	5	7
Musty.....	—	—	1	1
Sample.....	—	1	1	2
Totals	—	3	32	35
BARLEY				
2 Canada Eastern Six Row.....	—	—	6	6
3 Canada Eastern Six Row.....	—	1	30	31
4 Canada Eastern.....	—	5	42	47
5 Canada Eastern.....	—	1	—	1
Tough.....	—	4	7	11
Sample.....	—	1	1	2
Totals	—	12	86	98
RYE				
2 Canada Eastern.....	—	12	3	15
3 Canada Eastern.....	—	—	4	4
Tough.....	—	—	1	1
Sample.....	—	—	1	1
Totals	—	12	9	21

**Table D-10.—Carlot Inspections Eastern Grain, Crop Year 1961-62,
by Grains, Grades and Points—Continued**

Grade	Montreal	Toronto	Chatham	Total
BUCKWHEAT				
Tough.....	—	—	6	6
Totals.....	—	—	6	6
CORN				
Extra Dry 1 Canada Eastern Yellow.....	—	—	136	136
1 Canada Eastern Yellow.....	—	—	217	217
Extra Dry 2 Canada Eastern Yellow.....	—	—	84	84
2 Canada Eastern Yellow.....	—	—	183	183
Extra Dry 3 Canada Eastern Yellow.....	—	—	20	20
3 Canada Eastern Yellow.....	2	—	23	25
Extra Dry 4 Canada Eastern Yellow.....	—	—	1	1
4 Canada Eastern Yellow.....	1	—	11	12
5 Canada Eastern Yellow.....	—	—	4	4
Tough.....	—	—	38	38
Damp.....	—	—	179	179
Moist.....	—	—	156	156
Totals.....	3	—	1,052	1,055
BEANS				
Extra 1 Canada Eastern Pea.....	—	—	13	13
1 Canada Eastern Pea.....	—	—	351	351
2 Canada Eastern Pea.....	—	—	34	34
3 Canada Eastern Pea.....	—	—	4	4
1 Canada Eastern Light Red Kidney.....	—	—	1	1
Tough.....	—	—	6	6
Damp.....	—	—	1	1
Totals.....	—	—	410	410
SOYBEANS				
1 Canada Yellow.....	—	—	157	157
2 Canada Yellow.....	—	33	1,360	1,393
3 Canada Yellow.....	—	2	36	38
4 Canada Yellow.....	—	—	2	2
5 Canada Yellow.....	—	—	2	2
Tough.....	—	3	241	244
Damp.....	—	—	19	19
Totals.....	—	38	1,817	1,855
FLAXSEED				
3 Canada Eastern.....	—	3	—	3
Tough.....	—	2	—	2
Totals.....	—	5	—	5
Totals, All Grains.....	3	566	7,109	7,678

Table D-11.—Cargo Inspections, Eastern Grain, Crop Year 1961-62

Grain	St. John and Halifax	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.	bu.
Wheat.....	—	175,406	100,000	2,252,906	2,528,312
Buckwheat.....	—	18,881	—	—	18,881
Corn.....	—	—	—	401,610	401,610
Soybeans.....	56,420	406,175	322,333	2,668,743	3,453,671
Totals.....	56,420	600,462	422,333	5,323,259	6,402,474

Table D-11A.—Cargo Inspections, Western Grain, Crop Year 1961-62

Grain	St. John and Halifax	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.	bu.
Wheat.....	—	86,756	—	—	86,756
Barley.....	—	7,400	—	—	7,400
Buckwheat.....	7,053	—	—	—	7,053
Peas.....	33,045	32,347	—	—	65,392
Flaxseed.....	107,847	443,150	20,183	—	571,180
Totals.....	147,945	569,653	20,183	—	737,781

Table D-12.—Inspections, Eastern Grain in Bins, Trucks or Warehouses, Crop Year 1961-62

Grain	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.
Wheat.....	115,333	—	1,500	116,833
Oats.....	54,671	—	—	54,671
Buckwheat.....	31,970	—	—	31,970
Corn.....	4,139	—	1,500	5,639
Beans.....	—	—	186,476	186,476
Soybeans.....	67,224	—	—	67,224
Totals.....	273,337	—	189,476	462,813

Table D-13.—Inward and Export Cargoes Sampled and Grade Checked, Crop Year 1961-62

	Montreal	Sorel	Three Rivers	Quebec	Halifax and St. John	Baie Comeau	Total
Eastern Grain							
Inward.....	bu.	bu.	bu.	bu.	bu.	bu.	bu.
Export.....	3,094,625	—	—	—	—	—	3,094,625
	3,812,043	102,221	—	—	65,458	—	3,979,722
Western Grain							
Inward.....	12,245,415	633,585	—	—	—	—	12,879,000
Export.....	58,327,741	24,101,975	20,647,715	11,619,023	21,593,483	13,279,672	149,569,609
Totals	77,479,824	24,837,781	20,647,715	11,619,023	21,658,941	13,279,672	169,522,956

Table D-14.—Grain Sampled but not Inspected, Crop Year 1961-62

	Montreal	Toronto and Chatham	Sorel, Three Rivers and Quebec	Halifax and St. John	Baie Comeau	Total
Eastern Grain						
Carlots.....	2	146	—	—	—	148
Inward Cargoes (bu.).....	242,447	—	—	—	—	242,447
Outward Cargoes (bu.).....	—	—	—	—	—	—
Bin Lots (bu.).....	307,239	94,791	—	—	—	402,030
Western Grain						
Carlots.....	360	—	—	—	—	360
Inward Cargoes (bu.).....	297,966	477,052	546,521	—	—	1,321,539
Outward Cargoes (bu.).....	1,596,086	—	1,214,637	1,229,876	461,000	4,501,599
Bin Lots (bu.).....	195,154	—	32,689	—	—	227,843
U.S.A. Grain						
Carlots.....	565	—	—	—	—	565
Inward Cargoes (bu.).....	2,643,043	—	434,067	—	419,830	3,496,940
Outward Cargoes (bu.).....	7,959,020	—	11,173,375	—	34,392,720	53,525,115
Bin Lots (bu.).....	479,166	—	—	—	—	479,166
Australian Grain						
Outward Cargoes (bu.).....	—	—	526,752	—	—	526,752
Totals—Cars.....	927	146	13,928,041	1,229,876	35,273,550	1,073
—Bushels	13,720,121	571,843	13,928,041	1,229,876	35,273,550	64,723,431

APPENDIX E

Grain Weighing Branch

H. C. BRITTON, *Chief Weighmaster*

Under the provisions of Sections 33 and 124 of the Canada Grain Act, all grain received into or shipped from licensed terminal elevators is weighed under supervision of the Board's weighing staffs. Weighing services are also provided at licensed mill elevators in the Western Division.

During the Crop Year 1961-62 services were provided at 45 semi-public and private terminal elevators, and when required, at 27 mill elevators in the Western Division. Weighing services were also provided at Baie Comeau.

All scales and equipment for transferring grain to scales on receipt and from scales for shipment in all licensed terminal elevators and serviced mill and Eastern elevators were regularly inspected under the provisions of Section 92 of the Act.

In accordance with the special arrangement with the Standards Branch of the Department of Trade and Commerce, all scales in licensed terminal and Eastern elevators were inspected, verified and stamped by the Board's scale inspectors acting as inspectors under the Weights and Measures Act.

A semi-annual inspection was also made of all scales at terminal elevators to ascertain if scales were maintaining their accuracy. Special inspections were made when any doubt arose as to the accuracy of a scale.

Newly constructed elevator facilities and alterations to elevators and grain handling equipment were inspected by officials of the Branch to ensure that no condition existed which might affect the accuracy of the weighing of grain received at or shipped from these elevators.

The Branch maintained a close check on reported outturns at Eastern elevators of cargoes loaded at Lakehead elevators, and thorough investigations were made in cases where complaints were received relating to reported excessive outturn shortages. Detailed reports of the results of these investigations were submitted to the Board.

Under the provisions of Sections 139 and 140 of the Canada Grain Act, weighovers were conducted at 15 terminal elevators and 22 Eastern elevators, and results were submitted to the Board for comparison with records of outstanding warehouse receipts.

A program of staff training has been undertaken by the Branch, this program being under the direction of a senior officer. We feel that this will result in a more efficient operation. A new set of rules and regulations is at present being compiled and it is expected that it will be released in the early part of 1963.

We have also introduced a program whereby all competitions for promotion will be both of a written and oral nature. This will be based on the information and training provided under our new staff training program. We feel certain that the results of both the staff training and the competitions will be a well-trained and informed staff.

Summaries of grain weighed during the crop year, and other related information, are given in the tables attached to this Appendix.

Table E-1.—Gross Quantities of all Grains Weighed at Terminal Elevators in the Western Division during 1961-62 Crop Year

Point	Wheat	Oats	Barley	Rye	Flaxseed	Canadian Corn	Canadian Buckwheat	Miscellaneous
	bu.	bu.	bu.	bu.	bu.	bu.	bu.	lb.
RECEIPTS								
Fort William-Port Arthur.....	190,581,185	17,915,859	40,156,598	3,373,829	7,286,372	—	—	54,465,437
Vancouver-New Westminster.....	151,584,642	175,476	12,922,838	1,065,988	6,265,182	—	—	427,430,632
Victoria.....	5,297,802	1,789	—	—	—	—	—	28,926,090
Prince Rupert.....	—	—	10,410,556	—	—	—	—	—
Churchill.....	19,864,859	—	—	—	—	—	—	—
Calgary.....	204,565	—	1,611,466	—	—	—	—	8,216,040
Edmonton.....	217,915	110,854	143,781	—	21,270	10,340	—	76,475,820
Lethbridge.....	—	—	—	—	—	—	—	—
Moose Jaw.....	171,999	371,297	35,999	—	—	—	—	112,540
Saskatoon.....	1,638,231	279,906	618,441	—	—	—	—	38,251,870
North Transcona.....	65,198	120,418	27,124	2,000	—	—	—	149,420
Total Receipts.....	369,626,396	18,975,599	65,926,803	4,441,817	13,572,824	10,340	—	634,027,849
SHIPMENTS								
Fort William-Port Arthur.....	180,410,072	18,828,671	43,163,951	4,115,617	7,979,298	—	—	374,704,155
Vancouver-New Westminster.....	145,918,226	1,534,090	13,077,911	1,156,766	6,184,754	—	—	738,115,656
Victoria.....	4,535,787	71,323	9,928	—	—	—	—	37,693,762
Prince Rupert.....	—	—	10,531,314	—	—	—	—	8,914,180
Churchill.....	19,246,408	213,162	—	—	—	—	—	6,292,250
Calgary.....	261,775	2,306	1,712,726	—	—	—	—	8,672,130
Edmonton.....	440,217	84,531	93,140	—	—	7,468	—	48,165,555
Lethbridge.....	284,784	644	757	—	18,174	—	—	102,330
Moose Jaw.....	2,076,747	208,389	—	—	345	—	—	2,450,210
Saskatoon.....	1,769,526	241,948	618,175	—	95	—	—	46,149,500
North Transcona.....	346,111	72,443	28,562	2,000	—	—	—	226,800
Total Shipments.....	355,289,653	21,257,507	69,236,464	5,274,383	14,182,666	7,468	—	1,291,486,528

Table E-2.—Number of Cars Leaking and Cars with Missing Seals at the Lakehead, Other Points and at Winnipeg Yards, by Railways, for the Crop Year 1961-62

Destination	Cars Leaking		Missing Seals	
	C.N.R.	C.P.R.	C.N.R.	C.P.R.
Lakehead Elevators.....	13,644	9,970	1,117	959
Other Points.....	7,468	8,173	2,157	1,240
Totals.....	21,112	18,143	3,274	2,199
Totals—Both Railways.....	39,255		5,473	
Winnipeg Yards.....	205	453	188	245

Table E-3.—Number of Cars Weighed at all Points and Percentages of such Cars found Leaking or with Defective Seals, Crop Years 1960-61 and 1961-62

	Number		Percentage of Total	
	1961-62	1960-61	1961-62	1960-61
Cars Weighed In.....	270,195	298,394	100.0	100.0
Inward Cars Leaking.....	39,255	53,107	14.5	17.8
Inward Cars with Missing or Defective Seals.....	5,473	6,164	2.0	2.1
Cars Weighed Out.....	14,793	16,788	—	—

Table E-4.—Average Reported Outturn Shortages on Vessel Shipments of Grain from Fort William-Port Arthur to Canadian and United States Ports during the 1961-62 Crop Year

Grain	Bushels Shipped	Shortage in Pounds per 1,000 bushels	
		1961-62	1960-61
CANADIAN PORTS			
Wheat.....	159,287,957	37.75	33.88
Durum Wheat.....	8,298,726	35.17	45.08
Oats.....	16,152,934	23.63	21.08
Barley.....	23,999,026	36.05	28.65
Rye.....	2,723,857	59.06	51.85
Flaxseed.....	6,860,809	44.82	27.36
Buckwheat.....			
Sample Grain (in lbs.).....	22,164,480	.68 lbs. per 1,000 lbs.	.86 lbs. per 1,000 lbs.
Screenings (in tons).....	40,295	1.56 lbs. per ton	2.12 lbs. per ton
UNITED STATES PORTS			
Wheat.....	2,163,066	42.22	72.83
Barley.....	9,054,039	55.77	51.79
Rye.....	257,482	65.37	101.26
Screenings (in tons).....	12,291	—	—
TOTAL CANADIAN AND UNITED STATES PORTS			
Wheat.....	161,451,023	37.81	34.59
Durum Wheat.....	8,298,726	35.17	45.08
Oats.....	16,152,934	23.63	21.08
Barley.....	33,053,065	41.45	34.17
Rye.....	2,981,339	59.61	81.75
Flaxseed.....	6,860,809	44.82	27.36
Buckwheat.....			
Sample Grain (in lbs.).....	22,164,480	.68 lbs. per 1,000 lbs.	.86 lbs. per 1,000 lbs.
Screenings (in tons).....	52,586	1.20 lbs. per ton	1.33 lbs. per ton

APPENDIX F

The Grain Research Laboratory

J. ANSEL ANDERSON, *Director*

Section 22 of the Canada Grain Act requires that "the Board shall maintain an efficient and adequately equipped laboratory for research work in relation to grain."

The following summary of the Laboratory's work for 1962 deals with the quality of Canadian grain marketed in 1961-62, the estimated quality of the 1962 crops, variety testing, research, and other activities. In accordance with past practice, a separate annual report is being prepared by the Laboratory to put on record data on the quality of Canadian grain and progress made in research.

Quality of Grain Marketed in 1961-62

As in previous years, the Laboratory continued a systematic study of the quality of red spring wheat, durum wheat, barley, flax, and other cereal grains at various stages of marketing, throughout the crop year. (The detailed data obtained in these studies will be reported in the Laboratory's 1962 annual report.)

The bulk of the wheat unloaded at terminal elevators and exported during the 1961-62 crop year was No. 1 and No. 2 Northern. Average protein content for the principal grades was 14.0% and bushel weight was well over 62 lb. Compared with that of the previous crop year, No. 1 and No. 2 Northern marketed in 1961-62 was about the same in bushel weight, slightly higher in protein content and correspondingly higher in baking strength; the lower grades were about the same in bushel weight and protein content but slightly lower in baking strength. Average quality for all grades of wheat exported from the three sea-board areas was much the same, though Pacific exports of No. 1 Northern was highest in average protein content (14.5%) and Pacific exports of No. 3 and No. 4 Northern were highest in average bushel weight. Moisture content of export shipments in 1961-62 were at the lowest level in many years.

Durum wheat marketed in 1961-62, though in short supply, was about the same in bushel weight but substantially higher in protein content than that marketed in 1960-61; macaroni quality was excellent and rheological properties of the dough were satisfactory. The quality of malting barley, at an average level, was slightly better than barley marketed in the previous crop year. Flax shipments were slightly lower in quality and rapeseed shipments were higher in quality compared with those of the previous crop year.

Estimated Quality of the 1962 Crops

After two successive drought years, subsoil moisture reserves were poor throughout the Prairies this spring, but generous rainfall and cool weather during the growing season produced one of the largest crops on record. Conditions were extremely varied during the growing season and wet weather and frost were widespread during the early part of the harvesting period. However, from mid-September and well into October the weather was ideal and the bulk of the crop was harvested during that time. Nevertheless, the earlier adverse weather generally contributed to the production of substantial quantities of grain in the lower grades. Estimated production of the 1962 western crops are: wheat, 538 million bushels (including 61.2 million bushels of durum wheat); barley, 158 million bushels; flax, 15.3 million bushels, and rapeseed, 318 million pounds.

The principal grades for the red spring wheat crop will be No. 2 and No. 3 Northern and over 30% of the crop will grade No. 4 Northern or lower; protein

content is above average, and baking strength and supporting value are exceptionally high. Compared with the 1961-62 fourth quarter Pacific cargoes, the new crop from the Western Prairies (Alberta and western Saskatchewan) is slightly lower in bushel weight, but higher in protein content which is reflected in higher baking strength and supporting value. Except for No. 2 Northern, baking absorption is slightly higher and doughs have the same excellent handling quality. Compared with Atlantic cargoes, the new crop No. 1 to No. 3 Northern grades from the eastern Prairies (Manitoba and Saskatchewan) are slightly lower in bushel weight, but flour yield is higher. There are only small differences in protein content, but baking strength and supporting value are significantly higher. Baking absorption is at a slightly higher level and doughs handle very well. The No. 4 Northern grades from the western Prairies is markedly better than last year's grade in all quality measurements and is a superior wheat for its class.

The 1962 red spring wheat crop will provide a full range of high quality grades throughout the 1962-63 crop year.

Durum wheat production is the highest on record and estimates indicate that there will be a full range of grades available. Average protein content of the new durum crop is 13.9%, and bushel weight is 65.1 lb. Compared with last year's crop, the new crop is about the same in bushel weight but higher in kernel weight and semolina yield. Rheological properties of the dough are excellent and mixing times are normal. Though the percentage of vitreous kernels is lower, milling quality and macaroni quality are generally higher. Compared with wheat exported in the last quarter of 1961-62, the new crop is superior in all important quality properties. Accordingly, there will be a wide selection of high quality durum grades available during the 1962-63 crop year.

The barley crop suffered most from the severe frost; it is estimated that only 25% of the crop will grade 3 C.W. or higher; thus barley suitable for malting will be in short supply. By comparison with corresponding grades of last year's crop, the new Six-row grades are about the same in kernel weight, lower in nitrogen content and higher in yield of plump barley. Two-row grades are higher in nitrogen content than the Six-row grades. In general, malt extract yield of the 1962 crop will be somewhat higher than the 1961 crop, but cool and wet weather during the growing season increased dormancy and water sensitivity of germination and the new barley may require greater than usual care during processing.

Frost caused severe damage to much of the 1962 flax crop and somewhat less damage to the rapeseed crop; it is estimated that 20% of the flax crop will grade 2 C.W. and lower. However, compared with last year's crops, oil content is about 1% higher this year. Average oil content for the 1962 flax crop is 42.1% and for the rapeseed crop 43.0%.

Bulletins and Maps

Quality information of the 1962 western grain crops was presented at the October meeting of the Committee on Western Grain Standards, and was later published in two maps, three crop bulletins and four press releases; i.e., two wheat protein maps (preliminary and final); one bulletin on wheat; one on barley, and one on flax and rapeseed. The crop bulletin "Protein Survey of Wheat" was not published this year and much of the protein data for the 1962 crop was included in the bulletin "Canadian Wheat 1962." Quality information for the new crop is again given for western Prairie and eastern Prairie regions which correspond to areas that supply grain to the Pacific and Atlantic ports. The publication is especially designed to make it useful to importers of Canadian wheat and some of the information is also presented in French, German and Spanish. The crop bulletins "Canadian Barley" and "Canadian Flax and Rape-

seed" were both published this year without including individual shipping point data.

Four quarterly bulletins on red spring wheat cargoes and four on durum wheat cargoes were published during the 1961-62 crop year. Both publications give information in English as well as in French, German and Spanish, and there was also an English-Japanese edition for red spring wheat cargoes.

These publications are distributed by mail and over the counter by the Laboratory, by the Canadian Wheat Board, and by Canadian Government Trade Commissioners who receive their supplies direct by air mail. The publications also provide source information for answering numerous inquiries received on the quality of Canadian grain at different stages of marketing.

Service to the Grain Inspection Branch

The Laboratory worked closely with the Grain Inspection Branch throughout the year, providing the services required to aid in grading grain and associated problems. The main work dealt with quality tests on samples used to make up Standard and Standard Export samples, with tests of individual cargoes and unidentifiable wheat samples, and with supervision of moisture testing equipment. Results from the bi-weekly check samples for C.A.E. model 919 meters and the monthly check test samples for the Brown-Duvel method provided the necessary data for controlling the uniformity of moisture testing throughout the Government inspection system.

Some of the other work undertaken for the Inspection Branch included tests for possible contamination with mercurial fungicides, lipoxidase determination on durum wheat, and fatty acid tests on oil seed samples. In addition, moisture meters, balances, pint measures, thermometers, and weights were either repaired or checked for calibration. Also, drawings were prepared for new inspection office space at various locations and advice was given on requirements for the installation of moisture testing rooms.

Variety Testing

To ensure maintenance of accepted standards of quality in new varieties of the various cereal grains, the Laboratory collaborates each year in a program of quality testing of plant breeders' varieties sponsored by the Associate Committee on Grain Research. Over 50 varieties of hard red spring, durum, and western winter wheats were tested.

The results of the world-wide collaborative study of new bread wheats, initiated in 1961, showed that the majority of the collaborators in our major market areas considered two of the wheats to be of satisfactory quality. One of these wheats, developed for the saw-fly area of the Prairies, has been named Cypress and has been released for commercial production in Canada. The second, an early maturing wheat for northern areas, will probably be licensed at a later date when adequate seed stocks have been obtained.

A similar but smaller scale collaborative study of new durum wheat varieties has been arranged. Three varieties grown this summer at several stations in Western Canada will be tested by six collaborators on this continent and in Europe. Results of this study will be considered by the Associate Committee on Grain Research at its 1963 meeting.

Canadian grown wheats of the Uniform Quality Nursery were again subjected to detailed milling and baking tests providing quality data for a number of wheats which serve as parent stock in the wheat breeding program.

The Laboratory continued to collaborate with the Crop Quality Council of the United States in testing the quality of 35 varieties of American grown spring and winter wheats.

Two barley hybrids that had shown promising malting quality and good hull adherence in early tests were subjected to pilot malting and brewing tests in co-operation with the Brewing and Malting Barley Research Institute. One was lower in malt extract and the other poorer in hull adherence than the standard malting varieties, and the originators have discarded these lines in favor of more promising material now in preliminary tests.

Services to Other Organizations

Technical advice and some laboratory service has been given to Trade Commissioners, other Government agencies, and grain companies. Most of this work relates to the handling and promotion of sales of Canadian grain. Other projects, mostly variety testing, have been undertaken in co-operation with branches of the Canada Department of Agriculture, the Brewing and Malting Barley Research Institute, Winnipeg, the Crop Quality Council, Minneapolis, and Canadian mills and grain companies.

The Laboratory continued with the program of training technical officers for the Technical Services and Market Research Department of the Canadian Wheat Board. Trainees who have completed their period of study have made several missions abroad and one has been posted to the new Wheat Board office in Brussels. In addition, studies of the performance of Canadian wheat over a wide range of conditions are being undertaken. The results will provide information for pamphlets to be published by the Wheat Board for distribution to export markets.

The Laboratory continued active participation in the work of the American Association of Cereal Chemists and other professional organizations. One of the major contributions has been made by Dr. Hlynka who is editor of the American Association of Cereal Chemists third monograph, "Cereal Chemistry of Wheat," which is expected to be published in 1963.

Research

Improvement of all phases of the Laboratory's work depends on the experience and the increased knowledge obtained through research.

In basic research on bread wheats an improved method for the determination of the disulfide content of flour or dough proteins has been developed. The method provides a new approach to the study of wheat quality from the point of view of its disulfide-sulfhydryl chemistry. Further progress has also been made in the study of the relation of the small amount of fat, normally present in flour, to flour quality.

Direct evidence has been obtained, with the aid of radio-active tracer and ion exchange chromatographic techniques, that the common flour improving reagents do, in fact, react with the sulfhydryl groups of flour proteins. During the course of this work a new detector was developed for the continuous measurement of radio-active carbon activity in solutions.

In a further study of the chemistry of wheat proteins some possible oxidation products of cystine have been synthesized and their properties examined.

In applied research aimed at more practical problems, work on laboratory scale conditioning of wheat showed that when doughs were subjected to a more vigorous mixing procedure in test baking there was an improvement in the quality of the conditioned wheat. Studies directed towards the improvement of

milling techniques have included the development of oscillating type of sifting units for the laboratory mill, and in durum milling, improved techniques for increasing the yield of semolina have been devised and adopted. An extensive study of the blending value of Canadian wheat when mixed with wheats of weaker quality has also been initiated. The Laboratory is also co-operating with the National Research Council in a detailed study, by the multivariate statistical analysis, of the relation of quality tests on wheat and baking strength.

In barley research, a protein complex similar to that of chill haze in beer, has been isolated from barley and malt and has been resolved into a number of components by the technique of starch gel electrophoresis. Studies of such complexes from barley and malt are being made in relation to barley quality. A new line of research on malting is being developed by studies of the effect of accelerators and inhibitors on barley on growth and germination. An investigation of the effect of two wild oat eradicators—Carbyne and Avadex—on the malting and brewing behaviour of barley showed that there was no deleterious effect when these herbicides were applied to barley plots at recommended rates.

Staff

In October, Dr. Anderson was appointed Director of the Research Station, Canada Department of Agriculture, Winnipeg, but continued to act as director of the Board's Laboratory pending appointment of his successor. Mr. Aitken, who first joined the Laboratory in 1923 and served under all three Chief Chemists of the Board, retired in October. His contributions have helped greatly to establish the prestige and recognition that the Laboratory has today. Dr. W. Bushuk, who headed the Basic Wheat Research group, resigned to take the position of Director of Research, Ogilvie Flour Mills Co. Ltd., Montreal. Dr. R. Matsuo has returned to the Laboratory after three years of studies for his Ph.D. degree at the University of Alberta, and Dr. J. W. Clayton, a graduate of the University of Saskatchewan, joined the staff. Dr. Peter Meredith, who spent one year in the Laboratory as an N.R.C. Postdoctorate Fellow, returned to the Wheat Research Institute, Christchurch, New Zealand. After 23 years of service, Mr. H. J. Ponting retired due to ill health; unfortunately, he died shortly thereafter. There were other resignations and additions in the sub-professional staff. A position for summer students was filled by Rudolph Wagemann.

Overseas Visits and Visitors

In June, Dr. Anderson travelled to Vienna to attend the Biennial Meeting of the International Association for Cereal Chemistry and the meeting of its Executive Committee. Following the Vienna meetings, Dr. Anderson spent a week in England visiting a number of laboratories and research institutions. Dr. Irvine's work for the Wheat Board Technical Services and Market Research Department took him to the Far East, India, Near East, Nigeria, as well as Europe. While in Europe, Dr. Irvine also attended the ICC meetings in Vienna.

The Laboratory this year received missions from Colombia and Ecuador, Cyprus, Finland, Japan, and the U.S.S.R.; a Wheat Delegation from the United States; and a group of FAO scholars, representing the Near and Middle East and Asia. Visitors also came from Australia, New Zealand, the Far and Middle East, South Africa, South America, Europe, England, and the United States.

APPENDIX G

Canadian Government Elevators

A. H. WILSON, *General Manager*

In accordance with Section 166 of the Canada Grain Act and Order-in-Council P.C. 1372 of August 19, 1925, the Board manages and operates five interior terminal elevators at Moose Jaw, Saskatoon, Calgary, Edmonton and Lethbridge, one terminal elevator at Prince Rupert and leases one terminal elevator at Port Arthur.

During the 1961-62 crop year, all elevators continued to be operated under Semi-Public Terminal Elevator Licence. Port Arthur Elevator continued under lease to the McCabe Grain Company Limited.

The following report covers the crop year 1961-62 except where otherwise indicated.

Handlings

The total handlings for the 1961-62 crop year approximate those of 1960-61. Total receipts were 17.9 million bushels (last year 19.8 million bushels); total shipments were 20.1 million bushels (last year 21 million bushels). As was the case last year, wheat, barley and rapeseed were the three principal crops handled, with barley accounting for two-thirds of the handlings.

The table below will show that stocks as at July 31, 1962, have been reduced by over two million bushels over the amount in store a year ago. This is accounted for mainly by shipments of wheat out of the Moose Jaw elevator of over two million bushels, while wheat receipts were less than 200,000 bushels. This elevator was used mainly for wheat storage, although small quantities of oats and barley were stored.

In the Saskatoon elevator, there were more diversified handlings with about an equal amount of receipts and shipments of each of the four grains handled—wheat, oats, barley and rapeseed.

The situation was similar in Calgary where three grains were handled—wheat, barley and rapeseed. Edmonton is the only location where receipts exceeded shipments. It also handled the largest number of grains, including wheat, oats, barley, flax, corn and rapeseed.

At Lethbridge, the only grain in store is wheat and stocks were again reduced this crop year. The Prince Rupert elevator was again used exclusively for barley and handled almost the same quantity as it did last year.

A substantial portion of business was done by leasing space to various customers for special binning. The entire rapeseed handling was on a special bin basis.

Receipts and shipments, in millions of bushels, of the principal grains handled were as follows:

	Receipts	Shipments
Wheat.....	2.2	4.8
Barley.....	12.7	12.9
Rapeseed.....	2.3	1.8

Rapeseed receipts are down from last year when 4.25 million bushels were received.

Receipts and shipments by elevators were as follows:

Elevator	Capacity	Stocks August 1, 1961	Net Receipts	Net Shipments	Stocks July 31, 1962
	million bu.	bu.	bu.	bu.	bu.
Moose Jaw.....	5.50	5,124,387	584,205	2,295,050	3,413,542
Saskatoon.....	5.50	3,393,069	3,211,077	3,419,987	3,184,159
Calgary.....	2.50	1,182,714	1,966,118	2,129,057	1,019,775
Edmonton.....	2.35	610,717	1,913,624	1,492,552	1,031,789
Lethbridge.....	1.25	676,636	635	286,526	390,745
Prince Rupert.....	1.25	400,618	10,244,417	10,531,314	113,721
Totals.....	18.35	11,388,141	17,920,076	20,154,486	9,153,731

Charges

All charges remain unchanged from what they were a year ago.

At Prince Rupert, charges were at the same rates as charged by other terminal elevators at the Pacific coast.

At the interior elevators, storage charges were 1/45¢ per bushel per day as compared to the maximum allowable tariff of 1/30¢.

Elevation charges at interiors were:

Wheat, Oats, Barley, Rye and Corn — 1¼¢ per bushel

Flax — 2¾¢ per bushel

These charges are 1¢ to 1½¢ lower than elevation charges made at Lakehead or other Pacific Coast ports.

Charges for handling rapeseed were at the special tariff authorized by the Board of Grain Commissioners and were the same as those in effect last year.

Maintenance

Concrete restoration by our Repair and Reconstruction Division was continued at Calgary and Edmonton. At Calgary, the work is now complete but a small portion remains to be done at Edmonton. As part of this restoration program, the elevators at Moose Jaw, Saskatoon and Calgary were painted and the name lettered on the bins.

Other major maintenance was as follows:

At the Port Arthur elevator, extensive repairs were made to the dock; the heating system was renewed and electro-magnets installed to remove metal from grain.

At Saskatoon, replacement has begun of the rails, track ties and track ballast.

At Edmonton, the replacement of one dryer and conversion of another, to modern oil-fired units, were completed. Plumbing fixtures were replaced to provide adequate washroom facilities.

At Prince Rupert, further repairs were made to the dock, consisting mainly of repairs to the piling and braces. Work was started on a complete new washroom to replace old, inadequate equipment.

Electrical modernization was continued at Edmonton and Prince Rupert. When this work is completed, all elevators will be equipped with modern electrical distributing equipment.

Staff

Staff employed at December 31, 1962, compared with December 31, 1961, is as follows:

	1962		1961	
	Continuing Establish- ment	Casuals	Continuing Establish- ment	Casuals
Winnipeg (Head Office).....	8	—	9	1
Moose Jaw.....	32	—	31	1
Saskatoon.....	31	6	33	7
Calgary.....	30	6	32	2
Edmonton.....	32	—	32	5
Lethbridge.....	19	—	20	—
Prince Rupert.....	32	—	32	10
Repair and Reconstruction Unit.....	3	—	3	11
Totals.....	187	12	192	37

Revenue and Expenditure

Revenue and expenditure for the fiscal year 1961-62 compared with the previous fiscal year, were as follows:

	1961-62	1960-61
Revenue.....	\$1,991,360	\$2,021,294
Expenditure.....	1,567,594	1,516,494
Surplus.....	\$ 423,766	\$ 504,800

For the first nine months of the 1962-63 fiscal year, cash revenue was \$1,260,768, and expenditure was \$906,132.

APPENDIX H

Table H-1.—EXPENDITURE, by Point, Branch and General Item, Fiscal Year ended March 31, 1962

Point and Branch	Salaries	Rent	Travel	General	Total
	\$	\$	\$	\$	\$
Winnipeg					
Executive—Salaries of Commissioners.....	42,000.00	—	—	—	42,000.00
Executive—General.....	68,172.11	13,275.51	9,997.98	8,266.90	99,712.50
Assistant Commissioner.....	13,539.96	900.00	1,637.46	865.09	16,942.51
Research Laboratory.....	277,024.47	40,062.39	8,504.24	101,026.92	426,618.02
Statistics.....	175,536.96	17,413.66	1,971.03	38,574.22	233,495.87
Appeal Tribunal.....	7,140.00	82.25	—	1,196.17	8,418.42
Standards Committee.....	—	—	1,449.05	990.00	2,439.05
Inspection.....	625,916.01	30,816.93	6,254.66	43,428.54	706,416.14
Weighing.....	55,662.92	1,925.12	1,435.43	753.97	59,777.44
Churchill					
Inspection.....	19,926.06	15.60	4,394.92	1,403.43	25,740.01
Weighing.....	13,373.03	10.40	3,912.83	263.52	17,559.78
Keewatin					
Inspection.....	3,823.51	—	—	—	3,823.51
Weighing.....	5,962.84	—	—	31.70	5,994.54
Saskatoon					
Assistant Commissioner.....	13,186.63	—	2,225.33	291.20	15,703.16
Inspection.....	41,651.03	877.00	146.70	1,217.35	43,892.08
Weighing.....	32,280.21	—	87.60	72.90	32,440.71
Moose Jaw					
Inspection.....	13,393.57	—	302.40	365.42	14,061.39
Weighing.....	18,502.30	—	—	22.65	18,524.95
Regina					
Assistant Commissioner..	5,577.96	1,715.00	397.34	173.49	7,863.79
Medicine Hat					
Inspection.....	941.84	31.00	25.74	4.70	1,003.28
Weighing.....	11,225.60	—	—	26.30	11,251.90
Lethbridge					
Inspection.....	9,382.50	—	61.80	117.09	9,561.39
Weighing.....	5,160.00	—	—	6.00	5,166.00
Calgary					
Inspection.....	115,219.34	6,689.00	391.01	6,439.78	128,739.13
Weighing.....	54,335.39	726.00	1,375.23	159.45	56,596.07
Appeal Tribunal.....	8,157.58	904.75	915.44	880.48	10,858.25
Edmonton					
Inspection.....	117,807.75	9,474.00	695.80	6,423.21	134,400.76
Weighing.....	18,334.77	—	40.40	43.83	18,419.00
Appeal Tribunal.....	7,140.00	1,170.00	—	439.23	8,749.23
Assistant Commissioner..	14,043.69	1,992.00	2,299.10	320.56	18,655.35
Vancouver					
Inspection.....	284,454.46	9,054.68	4,289.99	11,231.99	309,031.12
Weighing.....	238,686.61	3,460.86	3,414.88	2,294.87	247,857.22
Statistics.....	15,200.25	2,355.34	1,293.07	387.90	19,236.56
Victoria					
Inspection.....	16,199.87	—	14.00	36.24	16,250.11
Weighing.....	13,058.64	—	97.00	24.68	13,180.32

Table H-1.—EXPENDITURE, by Point, Branch and General Item, Fiscal Year ended March 31, 1962—Concluded

Point and Branch	Salaries	Rent	Travel	General	Total
	\$	\$	\$	\$	\$
Prince Rupert					
Inspection.....	21,013.98	—	—	1,022.40	22,036.38
Weighing.....	17,874.18	—	162.75	85.56	18,122.49
Fort William					
Inspection.....	873,452.42	24,780.00	4,203.87	41,553.99	943,990.28
Weighing.....	748,447.90	5,505.91	30,574.13	7,114.50	791,642.44
Toronto					
Inspection.....	10,059.25	1,200.00	519.36	570.80	12,349.41
Weighing.....	—	—	—	—	—
Chatham					
Inspection.....	42,454.10	4,320.00	9,951.31	1,487.75	58,213.16
Ottawa					
Inspection.....	15,219.96	—	3,183.03	193.35	18,596.34
Montreal					
Inspection.....	149,440.11	5,645.00	19,078.86	4,822.96	178,986.93
Weighing.....	8,505.00	1,100.00	—	411.38	10,016.38
Statistics.....	20,441.68	2,400.00	—	589.50	23,431.18
Baie Comeau					
Inspection.....	17,202.94	—	210.50	84.37	17,497.81
Weighing.....	—	—	—	—	—
Totals	4,286,129.38	187,902.40	125,514.24	285,716.34	4,885,262.36

Table H-2—ACCRUED REVENUE, by Point and Branch, Fiscal Year ended March 31, 1962.

Point and Branch	Fees	Samples Sold	Other Revenue (a)	Total
	\$	\$	\$	\$
Winnipeg				
Executive.....	—	—	—	—
Statistics.....	56,981.64	—	7.11	56,988.75
Appeal Tribunal.....	1,578.00	—	—	1,578.00
Research Laboratory.....	—	—	1,456.89	1,456.89
Inspection.....	360,546.65	6,893.68	4,009.53	371,449.86
Weighing.....	19,614.91	—	608.01	20,222.92
Churchill				
Inspection.....	58,869.60	—	—	58,869.60
Weighing.....	30,012.56	—	—	30,012.56
Keewatin				
Inspection.....	2,435.75	—	341.17	2,776.92
Weighing.....	7,556.52	—	491.20	8,047.72
Saskatoon				
Inspection.....	25,104.53	761.70	—	25,866.23
Weighing.....	13,042.69	—	—	13,042.69
Moose Jaw				
Inspection.....	11,349.44	305.77	—	11,655.21
Weighing.....	5,919.32	—	262.30	6,181.62

**Table H-2.—ACCRUED REVENUE, by Point and Branch, Fiscal Year
ended March 31, 1962—Concluded**

Point and Branch	Fees	Samples Sold	Other Revenue (a)	Total
	\$	\$	\$	\$
Medicine Hat				
Inspection.....	5,289.74	—	14.56	5,304.30
Weighing.....	10,354.63	—	486.08	10,840.71
Lethbridge				
Inspection.....	2,134.72	128.90	—	2,263.62
Weighing.....	406.60	—	—	406.60
Calgary				
Inspection.....	109,778.63	1,689.63	724.25	112,192.51
Weighing.....	21,698.44	—	356.31	22,054.75
Appeal Tribunal.....	1,047.00	—	—	1,047.00
Edmonton				
Inspection.....	147,436.58	1,927.00	1,293.53	150,657.11
Weighing.....	3,605.46	—	131.97	3,737.43
Appeal Tribunal.....	489.00	—	—	489.00
Vancouver				
Inspection.....	384,588.73	12,404.76	825.72	397,819.21
Weighing.....	293,130.20	—	685.49	293,815.69
Statistics.....	16,318.32	—	—	16,318.32
Victoria				
Inspection.....	13,329.45	256.86	—	13,586.31
Weighing.....	9,967.88	—	—	9,967.88
Prince Rupert				
Inspection.....	31,634.12	224.93	—	31,859.05
Weighing.....	22,706.01	—	—	22,706.01
Fort William				
Inspection.....	680,988.02	9,926.49	1,080.71	691,995.22
Weighing.....	515,474.23	—	5,128.87	520,603.10
Toronto				
Inspection.....	5,329.19	121.50	52.21	5,502.90
Weighing.....	—	—	—	—
Chatham				
Inspection.....	41,204.20	450.89	1,770.26	43,425.35
Montreal				
Inspection.....	10,680.91	394.72	2,452.43	13,528.06
Weighing.....	383.87	—	—	383.87
Statistics.....	9,175.84	—	—	9,175.84
Baie Comeau				
Inspection.....	5,778.08	—	2,197.63	7,975.71
Weighing.....	778.91	—	4,528.82	5,307.73
Totals.....	2,936,720.37	35,486.83	28,905.05	3,001,112.25

(a) Details in Table H-4.

Table H-3.—Accrued Revenue and Net Expenditure, by Points and Branches, Fiscal Year ended March 31, 1962

	Inspection	Weighing	Appeal Tribunals	Statistics	Research Laboratory	Grain Standards Commit- tees	Adminis- tration	Executive, Salaries of Commis- sioners	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$
REVENUE									
Winnipeg.....	371,449.86	20,222.92	1,575.00	56,988.75	1,456.89	—	—	—	451,693.42
Churchill.....	58,869.60	30,012.56	—	—	—	—	—	—	88,882.16
Keewatin.....	2,776.92	8,047.72	—	—	—	—	—	—	10,824.64
Saskatoon.....	25,866.23	13,042.69	—	—	—	—	—	—	38,908.92
Moose Jaw.....	11,655.21	6,181.62	—	—	—	—	—	—	17,836.83
Regina.....	—	—	—	—	—	—	—	—	—
Medicine Hat.....	5,304.30	10,840.71	—	—	—	—	—	—	16,145.01
Lethbridge.....	2,263.62	406.60	—	—	—	—	—	—	2,670.22
Calgary.....	112,192.51	22,054.75	1,047.00	—	—	—	—	—	135,294.26
Edmonton.....	150,657.11	3,737.43	489.00	—	—	—	—	—	154,883.54
Vancouver.....	397,819.21	293,815.69	—	16,318.32	—	—	—	—	707,953.22
Victoria.....	13,586.31	9,967.88	—	—	—	—	—	—	23,554.19
Prince Rupert.....	31,859.05	22,706.01	—	—	—	—	—	—	54,565.06
Fort William.....	691,995.22	520,603.10	—	—	—	—	—	—	1,212,598.32
Toronto.....	5,502.90	—	—	—	—	—	—	—	5,502.90
Chatham.....	43,425.35	—	—	—	—	—	—	—	43,425.35
Ottawa.....	—	—	—	9,175.84	—	—	—	—	—
Montreal.....	13,528.06	383.87	—	—	—	—	—	—	23,087.77
Baie Comeau.....	7,975.71	5,307.73	—	—	—	—	—	—	13,283.44
Totals.....	1,946,727.17	967,331.28	3,114.00	82,482.91	1,456.89	—	—	—	3,001,112.25

Table H-3.—Accrued Revenue and Net Expenditure, by Points and Branches, Fiscal Year ended March 31, 1962—Concluded

	Inspection	Weighing	Appeal Tribunals	Statistics	Research Laboratory	Grain Standards Commit- tees	Adminis- tration	Executive, Salaries of Commis- sioners	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$
EXPENDITURE									
Winnipeg.....	706,416.14	59,777.44	8,418.42	233,495.87	426,618.02	2,439.05	116,655.01	42,000.00	1,595,819.95
Churchill.....	25,740.01	17,559.78	—	—	—	—	—	—	43,299.79
Keewatin.....	3,823.51	5,994.54	—	—	—	—	—	—	9,818.05
Saskatoon.....	43,892.08	32,440.71	—	—	—	—	15,703.16	—	92,035.95
Moose Jaw.....	14,061.39	18,524.95	—	—	—	—	—	—	32,586.34
Regina.....	—	—	—	—	—	—	7,863.79	—	7,863.79
Medicine Hat.....	1,003.28	11,251.90	—	—	—	—	—	—	12,255.18
Lethbridge.....	9,561.39	5,166.00	—	—	—	—	—	—	14,727.39
Calgary.....	128,739.13	56,596.07	10,858.25	—	—	—	—	—	196,193.45
Edmonton.....	134,400.76	18,419.00	8,749.23	—	—	—	18,655.35	—	180,224.34
Vancouver.....	309,031.12	247,857.22	—	19,236.56	—	—	—	—	576,124.90
Victoria.....	16,250.11	13,180.32	—	—	—	—	—	—	29,430.43
Prince Rupert.....	22,036.38	18,122.49	—	—	—	—	—	—	40,158.87
Fort William.....	943,990.28	791,642.44	—	—	—	—	—	—	1,735,632.72
Toronto.....	12,349.41	—	—	—	—	—	—	—	12,349.41
Chatham.....	58,213.16	—	—	—	—	—	—	—	58,213.16
Ottawa.....	18,596.34	—	—	—	—	—	—	—	18,596.34
Montreal.....	178,986.93	10,016.38	—	—	—	—	—	—	212,434.49
Baie Comeau.....	17,497.81	—	—	23,431.18	—	—	—	—	17,497.81
Totals.....	2,644,589.23	1,306,549.24	28,025.90	276,163.61	426,618.02	2,439.05	158,877.31	42,000.00	4,885,262.36

Table H-4.—Summary of Operations by Branches, Fiscal Year ended March 31, 1962

	Inspection	Weighing	Appeal Tribunals	Statistics	Research Laboratory	Grain Standards Commit- tees	Adminis- tration	Executive, Salaries of Commis- sioners	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$
REVENUE									
Fees.....	1,896,460.84	954,373.32	3,114.00	82,475.80	—	—	—	—	2,936,423.96
Samples Sold.....	35,486.83	—	—	—	—	—	—	—	35,486.83
Other Revenue									
Overtime Refunded.....	9,646.02	12,609.05	—	—	—	—	—	—	22,255.07
Express Charges.....	4,985.50	—	—	—	—	—	—	—	4,985.50
Jury Fees.....	—	70.00	—	—	—	—	—	—	70.00
Fines.....	—	—	—	—	—	—	—	—	—
Refund of Previous Year's Expenses.....	130.48	296.41	—	—	1,456.89	—	—	—	1,883.78
Miscellaneous Revenue.....	—	—	—	7.11	—	—	—	—	7.11
Totals	1,946,709.67	967,348.78	3,114.00	82,482.91	1,456.89	—	—	—	3,001,112.25
EXPENDITURE									
Salaries.....	2,377,558.70	1,241,409.39	22,437.58	211,178.89	277,024.47	—	114,520.35	42,000.00	4,286,129.38
Rent.....	92,903.21	12,728.29	2,157.00	22,169.00	40,062.39	—	17,882.51	—	187,902.40
Travel.....	53,723.95	41,100.25	915.44	3,264.10	8,504.24	1,449.05	16,557.21	—	125,514.24
General Expenses.....	104,643.09	7,338.27	2,515.05	9,340.62	94,241.65	990.00	8,564.28	—	227,642.96
Printing and Stationery.....	15,750.28	3,973.04	.83	30,211.00	6,785.27	—	1,352.96	—	58,073.38
Totals	2,644,589.23	1,306,549.24	28,025.90	276,163.61	426,618.02	2,439.05	158,877.31	42,000.00	4,885,262.36

APPENDIX I

Regulations

Regulations in effect December 31, 1962, made in accordance with the provisions of the Canada Grain Act

Regulation

No.

- 1 Registration and Cancellation of Terminal Elevator Warehouse receipts.
- 2 Registration and Cancellation of Eastern Warehouse Receipts and Transfer Receipts.
- 3 Plans re Terminal and Eastern Elevators.
- 4 Cleaning of Grain and Bins.
- 5 Off Grades for Western Grain.
- 6 Off Grades for Eastern Grain.
- 7 Grades of Screenings.
- 8 Inspection of Samples taken other than at an Inspection Point.
- 9 Appeals from Inspecting Officers to Grain Appeal Tribunals.
- 10 Delivery of Grain to Ocean Vessels at St. Lawrence Ports.
- 11 Delivery of Grain to Ocean Vessels at West Saint John, N.B.
- 12 Delivery of Grain to Ocean Vessels at East Saint John, N.B.
- 13 Delivery of Grain to Ocean Vessels at Halifax, N.S.
- 14 Enforcement of Lien by Sale of Grain.
- 15 Drying of Grain.
- 16 Fees.
- 17 Records, Reports and Returns.
- 18 Procedure, Country Elevators.
- 19 Receipt for Grain Delivered to Private Country Elevators and Mill Elevators.
- 20 Maximum Tariff of Charges, Eastern Elevators.
- 21 Maximum Tariff of Charges and Shrinkage Allowance, Country Elevators.
- 22 Maximum Tariff of Charges, Terminal Elevators.
- 23 Applications for Licences, and Terms and Conditions under which Licences are issued.
- 24 Storage in Transit of Grain Grown Outside Canada.
- 25 Tickets and Receipts — Country Elevators.
- 26 Grain Treated with Poisonous Materials.
- 27 Shipment of Infested Grain.

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CANADA

Grain Commissioners

Board of

ANNUAL REPORT

OF THE

Board of Grain Commissioners for Canada

FOR THE YEAR

1963

DEPARTMENT OF AGRICULTURE

OTTAWA, CANADA

Minister:

Hon. Harry W. Hays, M.P.

Deputy Minister:

S. C. Barry

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Winnipeg, Manitoba,
January 28, 1964.

The Honourable Harry Hays, M.P.,
Minister of Agriculture,
Ottawa, Canada.

Sir,— We beg to submit herewith Report of the Board of Grain Commissioners for Canada for the year 1963 in compliance with Section 23 of the Canada Grain Act.

This report records information and statistics relating to grain handlings for the crop year August 1, 1962 to July 31, 1963, expenditures and revenue for the fiscal year April 1, 1962 to March 31, 1963, and summarizes the major activities of the Board for the 1963 calendar year.

Grain Supplies and Disposition — Crop Year 1962-63

The July 31, 1963 carry-over figure of 734.9 million bushels of the five principal grains represents an increase of approximately 37% over the small year ending stocks of the 1961-62 crop year. This increase was a result of a significantly larger volume of grain production and a flow of exports somewhat reduced from that of the previous crop year.

Canadian grain held either in licensed storage, in farm bins or in transit on August 1, 1962 amounted to 537.0 million bushels. The 1962 crops of wheat (565.6 millions) and oats (493.6 millions) reflect major increases over 1961 levels, while production of barley (165.9 millions), rye (12.0 millions) and flaxseed (16.0 millions) was only moderately above that of the prior year. This total production added to the inward carry-over provided an available supply of 1,790.1 million bushels of the five principal grains for either domestic or export shipments — some 240 millions above the comparable 1961-62 amount.

The combined 1962-63 disappearance figure of 1,055.3 million bushels comprised a grain export movement of 378.7 millions and a domestic flow for feed, seed, human food or industrial use of 676.6 millions. Although total Canadian grain consumption during the crop year was somewhat above the 1961-62 figure, closing stocks on July 31, 1963, had risen significantly due to the enlarged volume of production.

Marketings

Primary deliveries of the five principal Canadian grains from farms to the licensed elevator system totalled 671.3 million bushels — the heaviest inflow of grain since the 1952-53 crop year. The expanded rate of marketings was applicable to all grains but was primarily evident in the deliveries of wheat and oats which increased by 165 millions and 62 million bushels respectively. This year's marketings included 477.4 millions of wheat, 89.8 millions of oats, 80.5 millions of barley, 9.9 millions of rye, and 13.7 million bushels of flaxseed. The bulk of the 1962-63 marketings — 661.7 million bushels — was delivered to country elevators while receipts at interior mills and terminals amounted to 4.8 millions and platform loadings were .1 millions. Eastern farmers delivered 4.7 million bushels of eastern grown grain to the licensed elevator system during the crop year.

Country Elevator Shipments

Western licensees reported grain car loadings during 1962-63 amounting to 541.1 million bushels — approximately 8% above the previous crop year's total. This increased movement was evident in the shipments of all grains with the exception of barley as indicated by the following comparative figures: wheat 401.2 millions (389.0 millions), oats 61.8 millions (25.0 millions), barley 56.4 millions (71.1 millions), rye 8.5 millions (4.6 millions), and flaxseed 13.2 millions (11.8 millions). The volume of grain handled by Pacific Coast terminals — 168.3 million bushels — declined slightly to 31.0% of country elevator shipments. Carlots from the prairies to Fort William/Port Arthur elevators represented 54.7% of country elevator box-car traffic — an increase of some 8% over 1961-62. The rail movement to Churchill (20.1 millions) accounted for 3.7% of total country loadings while shipments to western mills and manufacturing plants (44.1 millions) comprised 8.1% of the total.

Terminal Handlings

Increases were evident in both receipts and vessel shipments of the five principal grains at the Canadian Lakehead in 1962-63. The volume of grain unloaded — 293.3 million bushels — reflects an increase of 43 millions over the previous crop year but was still some 33 millions below the 1960-61 figure. Lake shipments of 281.0 million bushels indicate a movement approximately 37 millions above that of last year but again some 30 millions below 1960-61. The direct vessel flow of Canadian grain from the Lakehead to St. Lawrence ports rose to 132.7 million bushels — a 20% increase over the 1961-62 amount. Direct overseas shipments of 20.7 million bushels during the crop year under review indicate a record export volume for this port. Vessel shipments to U.S. lake ports of 4.7 million bushels are less than one-half of the previous crop year's figure.

Overseas clearances of the five principal grains from Pacific Coast ports amounted to 160.3 million bushels, indicating a decline in handlings of 20.6 millions compared with the record 1961-62 total. The reduced volume of grain exports — wheat 139.5 (149.9), oats 9.0 (.5), barley 5.2 (23.2), rye 1.6 (1.1) and flaxseed 5.0 (6.2) million bushels — was primarily a result of smaller purchases of Canadian wheat and barley by Communist China in 1962-63.

Wheat exports via the northern port of Churchill amounted to a record 21.8 million bushels in the 1962-63 crop year. The 1963 season of navigation also witnessed a record export movement of 22.9 million bushels of Canadian wheat carried in 48 vessels.

Eastern Elevator Handlings

The 1962-63 export volume of Canadian grain moving ex licensed eastern elevators — 141.5 million bushels — reflected a decline of some 9 millions from the previous crop year. This reduction was applicable throughout most of the eastern system as indicated by the following totals: Kingston 1.1 (nil), Montreal 53.5 (60.3), Sorel 19.3 (23.8), Three Rivers 13.3 (20.3), Quebec 8.3 (11.3), Baie Comeau 26.2 (13.3), Saint John and Halifax combined 19.8 (21.8) million bushels.

A further reduction in the amount of grain reforwarded from Bay and Lake ports to St. Lawrence ports occurred during the crop year under review. The 31.2 million bushels, all grains, drawn from these transfer

points in 1962-63 represented only 18.8% of total receipts at St. Lawrence River ports compared to an average of 90% in pre-Seaway days. The Maritime ports received 22.5 million bushels of Canadian grain principally on a combined rail and lake basis ex Bay ports, but including 4.1 millions shipped direct by vessel from Fort William/Port Arthur elevators.

The 112.1 million bushels of United States grains handled at eastern elevators indicates an increase of 16 millions over the previous crop year and is approximately double the 1960-61 figure. Overseas clearances advanced to 91.8 million bushels in 1962-63 while the amount forwarded to the Canadian domestic market — 24.1 millions — declined slightly compared to 1961-62. The major grain involved in this movement was again U.S. corn with receipts of 69.0 millions, overseas shipments of 50.3 millions and Canadian domestic consumption of 22.0 million bushels.

Licensed eastern elevators provided a slightly increased volume of the five principal grains to the Canadian domestic market for processing or feed. The 1962-63 total of 97.8 million bushels included 49.9 millions of wheat, 25.0 millions of oats, 20.0 millions of barley, 1.2 millions of rye and 1.7 millions of flaxseed.

Exports

Shipments of the five principal Canadian grains to overseas destinations and the United States amounted to 351.1 million bushels during the 1962-63 crop year. The individual grain composition of this year's total includes 300.1 millions of wheat, 20.6 millions of oats, 10.5 millions of barley, 7.3 millions of rye, and 12.6 millions of flaxseed. A further 27.6 million bushels was exported in the form of wheat flour. Shipments of wheat, wheat flour and barley declined in comparison to 1961-62 figures while exports of oats indicate a substantial increase over the prior crop year. Clearances of Canadian rye increased moderately while flaxseed exports remained relatively steady in comparison with the preceding few years. The combined total of these five grains and wheat flour — 378.7 million bushels — is 31.6 millions below the corresponding 1961-62 figure but some 50 millions above the long term 30-year average. Information received from the Food & Agriculture Organization in Rome indicates that Canada's share of the world trade in wheat and wheat flour remained at approximately 22%.

Domestic Usage

Domestic consumption of the five principal Canadian grains for feed, seed, human food and industrial use totalled 676.6 million bushels in 1962-63 — an increase of approximately 73 millions over the preceding crop year figure. The increased estimated "on farms" disappearance of oats — involving direct feeding from farm stocks or farmer to farmer sales — was the principal force behind this expansion. Initial estimates of domestic usage for the individual grains show the following comparison with 1961-62 totals in brackets: wheat 141.7 (145.5), oats 401.8 (317.4), barley 123.9 (130.7), rye 4.4 (5.8) and flaxseed 4.8 (4.6), all in millions of bushels. The amount of grain moving through the licensed elevator system into the domestic market amounted to some 170 million bushels.

Carryover

Licensed elevator grain holdings combined with farm stock estimates indicate a carry-over of 734.9 million bushels as at July 31, 1963. This figure includes 487.2 millions of wheat, 150.3 millions of oats, 89.2 millions of

barley, 4.2 millions of rye, and 4.0 million bushels of flaxseed. Again, as in 1961-62, the amount of grain held in on farm storage represented only some 25% of the total carry-over figure.

Licensing and Bonding

The total licensed storage capacity at August 1, 1963 was 600,465,910 bushels — all in licensed elevators. This represented an increase of 16.7 million bushels in capacity since August 1, 1962. The number of licences in effect for country, terminal, mill and eastern elevators showed a decrease during the crop year, however, totalling 5,288 at August 1, 1963, compared with 5,327 a year ago. In addition to these licensed elevators there were licensed 14 Track Buyers, 16 Commission Merchants, and 3 Grain Dealers. New construction at eastern elevators amounted to 10.0 million bushels during the year and 4.7 million bushels were added to terminal storage at the Lakehead during the crop year 1962-63. Only minor changes were noted at private terminal and mill elevators, while country elevators showed a fractional increase of 1.3 millions in overall capacity.

Assistant Commissioners

Through its four Assistant Commissioners, the Board kept in close touch with the operation of licensed country elevators in the Western Division. During the year 1963, the Assistant Commissioners inspected 635 elevators in Manitoba, 917 in Northern Saskatchewan, 387 in Southern Saskatchewan, and 546 in Alberta, a total of 2,485. This inspection included checks on scales, sieves, moisture meters and certain other equipment; deductions for shrinkage and Prairie Farm Assistance Act Levy, and posting of current Board Regulations applying to country elevators.

Complaints originating from country points totalled nine, as compared with six in the previous year.

Disposition of complaints investigated was as follows:

	Manitoba	Saskatchewan	Alberta	Total
No grounds for complaint	—	6	—	6
Settlement effected	—	—	1	1
Licensee warned	—	—	1	1
Not yet disposed of	—	1	—	1
Totals	—	7	2	9

The Assistant Commissioners received and handled numerous inquiries on various matters related to country elevator operation.

Prosecutions

No penalties were levied during 1963 for breaches of the Canada Grain Act or the Board's Regulations and orders.

Shortages and Overages, Country Elevators

Audit reports were submitted with respect to 2,558 complete weighups at western country elevators carried out during the 1962-63 crop year. This reflected a continuation of the concerted efforts by the operating companies to maintain their audit control programs as close to a two year cycle as possible. The 1962-63 reports still included a substantial number of long period cut-offs. However, the relative patterns of overage and shortage percentages were not significantly different from those of the preceding year.

Elevators Reporting	1962-63	1961-62
Shortages	684	731
Neither Overages nor Shortages	8	1
Overages of less than .25%	1,203	1,117
Overages of .25% to .50%	516	392
Overages over .50%	147	127
Total elevators weighed over	2,558	2,368

The Board summoned 134 agents of country elevator licensees to appear at hearings held at Winnipeg, Regina, Saskatoon, Calgary and Edmonton, in connection with excessively high overages. At these sessions, members of the Board interviewed agents and examined records concerning their operations in the presence of senior officials of the companies concerned.

Regulations

On July 31, 1963, the Board revoked all Regulations under the Canada Grain Act then in effect and made new Regulations to be known as the **Canada Grain Regulations**, effective August 1, 1963. The format conforms with that established for all Government Departments and agencies, and makes for greater clarity.

The new regulations included two amendments to the maximum tariff of charges and shrinkage allowance for country elevators.

On December 30, 1963, the Board made two further amendments to the Canada Grain Regulations. The first item constituted a change in the definition for No. 1 Feed Screenings, and the second added a new section dealing with extraneous materials in grain and grain screenings.

Committees on Grain Standards

The Board constituted Committees on Western and Eastern Grain Standards for the Crop Year 1963-64 as provided in Section 25 of the Canada Grain Act. Personnel of these Committees is listed in Appendix A.

A meeting of the Western Committee was held at Winnipeg on October 17, 1963. The members received numerous reports relating to quality of crops grown in the 1963 season, and to various other matters in connection with grading of grain, and also selected and settled standard samples and standard export samples for various grades of Western grain.

The Eastern Committee met in Chatham on August 22, 1963, and in Montreal on October 24, 1963, and established standard samples for grades of grain grown in Eastern Canada.

Both groups authorized continued use of previously selected standard samples in instances where suitable recent samples for established grades were not available.

Inspection of Grain — Report on 1963 Crops

It was apparent in the spring of 1963 that there were wide variations in soil moisture conditions in Western Canada. Except for the most southerly portion of Manitoba, and the south and east central parts of Alberta, where it was very dry, moisture conditions were generally fair to excellent. Spring seeding was retarded by above normal precipitation in many areas; notable exceptions were in southwestern Saskatchewan and southern Alberta, where lack of rainfall resulted in some soil drifting and drought conditions. Timely rains and near perfect harvest weather in the major wheat producing areas of Saskatchewan have resulted in a record crop of better than average quality.

Yields and grades have been affected in a most variable pattern across the west, by drought, leaf rust, hail, and insects, but frost damage in all crops has been the lightest for many years.

Wheat crops in some areas reflect drought damage in lower than average test weight per bushel. The dry growing season in the major durum production areas had the effect of greatly reducing the incidence of plant diseases that cause blackpoint, smudge, and ergot. These factors were of major concern to us in 1962, but it is expected that this situation will be substantially improved as new crop durums enter the terminal elevators in sufficient quantity to affect the export blends substantially.

Some of the major areas of coarse grain production did not have the fine fall weather of the wheat belt. The barley crop is significantly below normal in general quality, the major factors contributing to this being thin, shrunken kernels, as a result of drought conditions in the southern areas, immature, weather stain, and blackpoint damage from high moisture conditions in some of the northern districts. A shortage of high quality malting grade barley is anticipated. Much of the oat crop was severely damaged from weathering and mildew where heavy stands had suffered from adverse weather; in addition, some oats from the drier areas are lightweight due to drought damage.

Flaxseed and rapeseed yields were generally good; flaxseed quality is excellent. Wild grass seeds and lady's thumb seed, which are difficult to remove from these crops, have markedly increased this year and will create cleaning problems in commercial cleaning operations. Tanka, a new variety of rapeseed, appears to have done well in its first year of commercial production.

Domestic mustard seed has shown no serious frost damage; in spite of more immature seed than normal, the crop is fairly high in quality, with minor general discolouration from weathering.

The basic quality of the rye crop is excellent, with less smudge evident than for several years. Much of it is grading No. 1 Canada Western; No. 1 would be the predominating grade if it were not for about normal incidence of ergot.

The field pea crop is distinctly superior in quality to last year's, and the new Creamette variety has received fairly wide acceptance on the basis of more regularity of size and improved appearance due to a smoother skin than the older varieties.

Except for northern and southeastern sections of Alberta, and some parts of southwestern Saskatchewan, most other areas of Western Canada received good moisture supplies during 1963. Following the dry fall over much of the Prairies, surface-saturating moisture is needed to provide good seedbeds in the spring of 1964.

Research Laboratory

Dr. Irvine, who joined the Laboratory in 1945, was appointed Director of the Laboratory early in the year; he succeeds Dr. Anderson who is now Director General, Research Branch, Canada Department of Agriculture, Ottawa.

Throughout the 1962-63 crop year, the Laboratory maintained systematic quality studies of the various grains loaded into and out of terminal elevators, and in the fall conducted its surveys of the quality of the 1963 crops. Information was reported to the Committee on Western Grain Standards and was published in the Laboratory's annual report, quarterly cargo bulletins, crop bulletins, maps and press releases. In addition to English, the bulletins dealing with wheat contain some information in French, German, Spanish and Japanese.

The Laboratory worked closely with the Inspection Branch in providing quality tests on a large variety of samples, in supervision of moisture-testing equipment and in tests of unlicensed varieties of questionable quality which were commercially grown, for example, the variety Prairie Pride. The Laboratory again participated in quality tests of Plant Breeders' varieties. Arising out of these studies two new varieties, Park, an early maturing red spring wheat, and Stewart 63, a durum wheat, were licensed. The Canadian Wheat Board was provided with quality information on competing world wheats entering European markets and personnel of their Technical Services and Market Research Department were briefed on the quality of Canadian wheat at various positions and other matters prior to commencing visits to overseas markets.

Research work, aimed at a better understanding of the chemical basis of quality in bread wheat, ranged from studies of the mechanism of dough formation, the functional role of sulfhydryl-disulfide chemistry in relation to dough properties and the application of radioactive tracer techniques, to extensive studies of the baking performance of Canadian wheat in blends with relatively weaker flours aimed at understanding the requirements of foreign markets. In durum wheat studies the formation of an undesirable brown color in macaroni is receiving attention, while in barley research the mechanism of germination as well as the relation of the formation of chill haze in the final product in relation to the quality of barley are under active investigation. The research projects completed during the year have been published in 13 papers appearing in appropriate scientific journals.

Active participation in the work of the American Association of Cereal Chemists and other organizations was continued. During the year, Dr. Irvine travelled to Europe to attend meetings of the Association of Cereal Research and the International Association for Cereal Chemistry. On these occasions he also visited laboratories and met with Canadian Wheat Board and other government officials. The Laboratory was also visited by missions and visitors from many parts of the world.

Appendix F of this report summarizes the work undertaken by the Laboratory this year and more complete detailed information will be published in the Laboratory's Annual Report for 1963.

Weighing of Grain

The staff of the Board's Weighing Branch provided usual weighing services at licensed elevators and investigated complaints relating to reports of excessive outturn shortages on carlot and cargo shipments. The Board's scale inspectors carried out periodic tests and inspections of scales at licensed terminal and eastern elevators, and made special inspections when such were considered necessary. Further detailed information in regard to the work of this branch is given in Appendix E.

Weighover of Stocks, Terminal and Eastern Elevators

In accordance with the provisions of Sections 139 and 140 of the Canada Grain Act, 27 terminal and 14 eastern elevators were weighed over during the 1962-63 crop year by members of the Board's Weighing and Inspection staffs.

Deferments into the following crop year were made at 11 terminal elevators at the Lakehead, 7 terminal elevators at other points, and at 17 eastern elevators. The Board found it necessary to grant these deferments to avoid delaying the handling and loading of grain required to meet export orders. However, it was possible to carry out six of these deferred weighovers before the end of December, 1963.

Tables C-12 to C-14 of Appendix C contain the results of weighovers carried out in the 1962-63 crop year.

Entomological Investigations

The regular program of inspection of terminal elevator premises and grain stocks to protect Canadian grain in storage from losses by insects and other grain pests was continued in 1963. Most of the terminal elevators were visited at least once during the year. The elevators in the Bay Port and Upper St. Lawrence River areas were visited three times; those in the Lower St. Lawrence River, twice. One trip was made to the terminals on the Pacific Coast. The conditions found at the time of each inspection were discussed with management. When necessary, instructions were issued regarding control measures.

With few exceptions, all of the terminals were essentially free from insect pests and consequently it was necessary to recommend only a small amount of additional insect control work at the time of inspection.

In general in Eastern Canada the season of 1963 was freer from infestation than in previous years, largely because of the lower summer temperatures. On the Pacific Coast, in spite of above normal temperatures, the terminals were freer from insect pests than in the past because of greater diligence on the part of the operators in carrying out the recommended control measures.

During recent years appreciable amounts of United States grain have been moved via the St. Lawrence Seaway for export through Canadian elevators. In addition, large amounts of United States corn have been brought in for domestic use when feed grain was in short supply in Eastern Canada. As in previous years some time has been devoted to checking this grain in storage in Canadian elevators.

An inspection was carried out of the Canadian Government Elevators at Saskatoon and Moose Jaw, Sask., Calgary, Alta., and Prince Rupert, B.C. The elevators at Edmonton and Lethbridge, Alta., were essentially empty

and were not inspected. Large representative samples were drawn from the bottom of all of the storage bins containing grain and examined for grain pests. In general all of these elevators were freer from pests than in the past.

As in previous years an analysis has been made of the carlots of grain found to be infested with grain insects at the time of unload at terminal elevators. This year the total number of infested cars was 158 as opposed to 28 in 1962 and 203 in 1961. This year there has been a much higher percentage of cars of coarse grains, particularly oats, showing evidence of infestation. Many of the infested cars originated in the Province of Manitoba.

Close contact has been maintained with the various grain inspection offices of the Board by visits to them while checking the terminal elevators. Discussions have been held with senior staff members on insect control on these occasions.

Some time was devoted to the preparation of an illustrated section for the Grain Inspector's Manual dealing with the description, life-history, habits, and control of the various insects commonly found in grain in Canada.

Contact has been maintained with the grain and milling trade by the Board's Entomologist, Dr. H. E. Gray. He attended the annual convention of the Association of Operative Millers in Buffalo, N.Y., in May, 1963.

Close liaison has been continued throughout the year with the Plant Protection Division. In 1962 an officer in another service reported that the lesser grain borer, a serious pest of stored grain, was established in Canada. During the current year the Board's Entomologist and inspectors of the Plant Protection Division made a careful examination of all of the locations from which this insect had been reported. No specimens alive or dead were found in any of the locations in question. A detailed biological and distributional study indicates that this pest is not likely to be able to establish itself in unheated storage in Canada.

Following the sale of wheat and flour to the U.S.S.R., the Board's Entomologist gave a short course on flour mill inspection to selected inspectors of the Plant Protection Division. This consisted of a practical demonstration in one of the mills on the inspection of flour mills, where and how to take samples in the plant, and the rating of mills from a sanitation point of view. The balance of the session consisted of an illustrated lecture on the common mill insects, their detection, identification, life-history and control.

Close liaison has also been maintained with the Canadian Wheat Board on matters related to grain storage and on grain-infesting insects.

Terminal and Eastern Complaints

During 1963, the Board directed the investigation of 61 complaints relating to reports of excessive outturn shortages on shipments to Eastern Canadian and U.S.A. points. Twelve of these complaints had been received and partially dealt with in the previous year.

Included were 55 on shipments from Fort William and Port Arthur, and 6 on shipments from Eastern transfer ports.

These complaints were disposed of as follows:

No cause of reported discrepancy found	57
Settlement effected	4
Total	61

Complaints on Export Shipments

A total of 57 complaints relating to shipments to Overseas destinations were dealt with by the Board and its officials in 1963. Of this number, 34 concerned outturn weights reported from Overseas, and 23 referred to some aspect of the quality of grain cargoes.

Disposition was as follows:

	Quality	Weight
No cause of reported discrepancy found	—	33
No grounds for complaint	21	—
Not yet disposed of	2	1
Totals	23	34

Statistics

Statistics relating to Canadian grain movement collected and compiled by the Board's Statistics Division are presented in Appendix C of this report.

Information Program

The Board's Mobile Grain Grading Exhibit was again on tour during the summer season of 1963 and visited Agricultural Fairs at 13 points in the Western provinces. This year it contained, in addition to the usual samples of main grades of various kinds of grain, a series of eight transparencies and a tape recording dealing with malting barley.

A smaller portable exhibit containing special items dealing with wheat varieties, types of kernel damage, and other related subjects, was placed on display at several Exhibitions and Winter Fairs. Qualified Board grain inspectors staffed both of these exhibits, and also assisted at a number of Malting Barley Field Days which were held in Manitoba and Saskatchewan. In addition, Assistant Commissioners were in attendance at many of the fairs.

The Board's offices were visited by a number of officials of the Foreign Trade Service of the Department of Trade and Commerce, and by other individuals and groups from Overseas and the United States who wished to discuss matters related to the grain trade and obtain first-hand information about the functions and services of the Board. Other visitors during the year included groups of country elevator agents and agriculture students.

In addition to discussions with members and officials of the Board, arrangements were made for visitors to tour the Inspection Branch, the Research Laboratory and other divisions as desired; also to view the colour motion picture film "Grain Handling in Canada".

Members of the Board and senior officials again accepted a number of invitations to address annual meetings of producer organizations and to discuss topics of current interest related to the Board's work.

Canadian Government Elevators

Receipts of grain during the crop year 1962-63 at the Canadian Government Terminal Elevators operated by the Board at Moose Jaw, Saskatoon, Calgary, Edmonton, Lethbridge and Prince Rupert, were 7.1 million bushels,

compared with 17.9 millions in the previous crop year. Total shipments were 10.3 millions, a decrease of 9.8 million bushels from the corresponding figure for 1961-62.

In the fiscal year 1962-63, expenditures exceeded revenues by the amount of \$250,567.

Lake Freight Rates

On March 10, 1959, under the provisions of Section 5 of the Inland Water Freight Rates Act, the Board issued Order No. 21 which revoked Order No. 20 of September 28, 1954. This had the effect of cancelling maximum freight rates established by the Board in Order No. 20 for the carriage of grain from Fort William or Port Arthur to other specified ports in Eastern Canada.

The average rates charged during the 1963 season of navigation are given in Table C-11 of Appendix C.

Prairie Farm Assistance Act

Under the provisions of Section 11 of the Prairie Farm Assistance Act, the Board continued to collect the one per cent levy on grain purchased by licensees under the Canada Grain Act. During the crop year 1962-63, the amount collected was \$8,614,424.00, an increase of \$1,774,925.00 over collections recorded for the previous crop year. Collections by the Board since the inception of the Act (August 1, 1939) to July 31, 1963, total \$142,707,131.00.

Organization and Personnel

Dr. G. N. Irvine, who served as Assistant Director of the Grain Research Laboratory and as Director of Technical Services and Market Research Department of the Canadian Wheat Board, was appointed to the post of Director, Grain Research Laboratory, on January 21, 1963.

As at December 31, 1963, the Board's staff totalled 876 as compared with 866 at the end of the previous year. The staff of the Canadian Government Elevators numbered 209, an increase of 10 over the previous year.

A chart of the Board's organization, including further details of staff location, follows this report.

Expenditure and Revenue

Total expenditure and accrued revenue of the Board, exclusive of the Canadian Government Elevators, for the fiscal year 1962-63 compared with 1961-62 was as follows:

	1962-63	1961-62
Expenditure	\$4,848,262.92	\$4,885,262.36
Revenue	2,452,615.96	3,001,112.25

Expenditure for the nine months of the 1963-64 fiscal year to December 31, 1963, including statutory salaries of the Commissioners, totalled \$3,803,383.

Cash revenue for the same nine-month period amounted to \$1,952,229 as compared with \$1,745,720 in the previous year.

Attached hereto is a series of Appendices which outline in greater detail the work of the Board's Divisions.

Respectfully submitted,

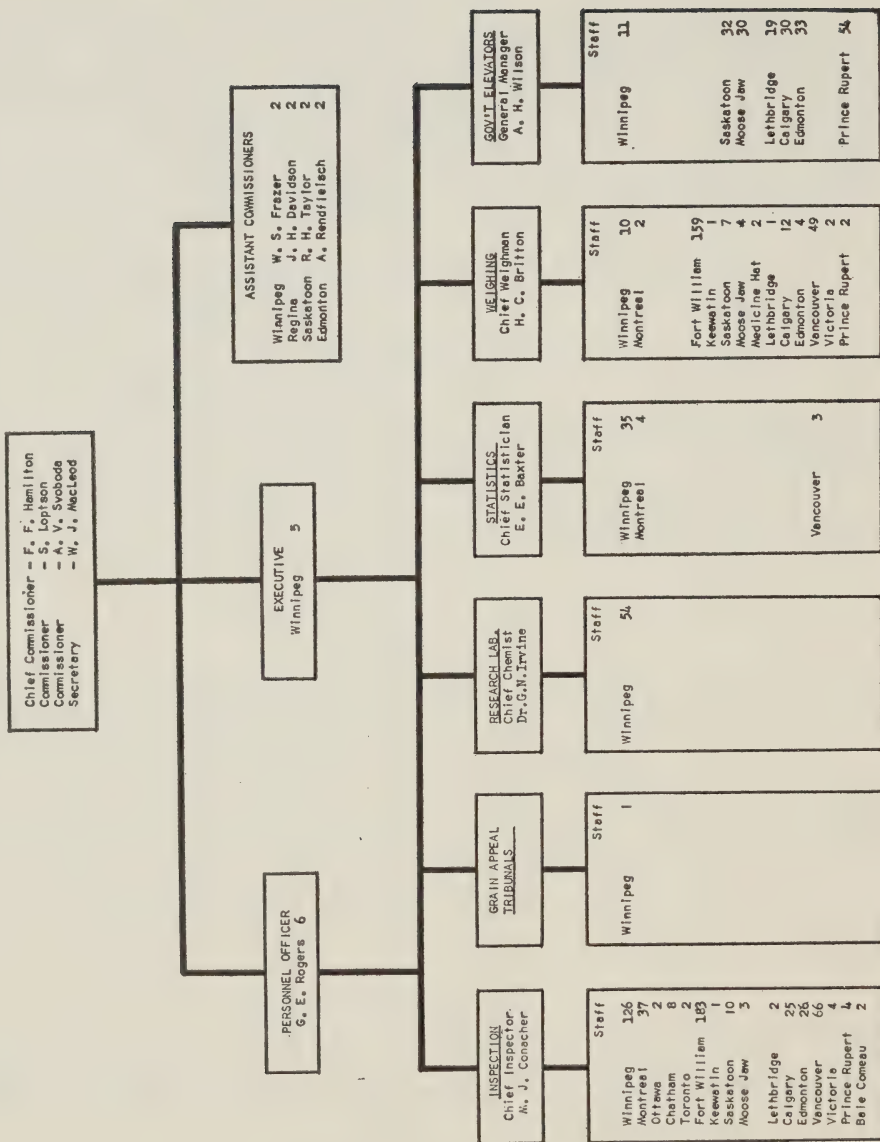
F. Hamilton,
Chief Commissioner

S. Loptson,
Commissioner

A. V. Svoboda,
Commissioner

W. J. MacLeod,
Secretary

BOARD OF GRAIN COMMISSIONERS FOR CANADA



A P P E N D I X A

Committee on Western Grain Standards as at December 31, 1963

F. F. Hamilton, Chief Commissioner, Board of Grain Commissioners.
S. Loptson, Commissioner, Board of Grain Commissioners.
A. V. Svoboda, Commissioner, Board of Grain Commissioners.
M. J. Conacher, Chief Grain Inspector, Board of Grain Commissioners.
Dr. G. N. Irvine, Chief Chemist, Grain Research Laboratory.
J. L. A. Doray, Chairman, Grain Appeal Tribunal, Winnipeg.
Dr. J. A. Anderson, Dominion Cerealist.
L. A. McCorquodale, representing the millers of wheat flour.

H. Anderson	}	Representing grain growers in Alberta.
R. J. Graham		
B. S. Plumer		
K. Anderson		
J. H. Harrison	}	Representing grain growers in Saskatchewan.
A. P. Gleave		
J. Wellbelove		
L. L. Gray		
N. W. Strelioff		
W. J. Parker	}	Representing grain growers in Manitoba.
P. A. McPhail		
Ray Mitchell		
G. Constable, representing grain growers in British Columbia.		
L. Bell, representing Plant Products Division, Department of Agriculture.		

Committee on Eastern Grain Standards as at December 31, 1963

F. F. Hamilton, Chief Commissioner, Board of Grain Commissioners.
S. Loptson, Commissioner, Board of Grain Commissioners.
A. V. Svoboda, Commissioner, Board of Grain Commissioners.
M. J. Conacher, Chief Grain Inspector, Board of Grain Commissioners.
W. G. Thomson, representing Montreal Board of Trade.
C. F. Bowker, representing Toronto Board of Trade.
C. Gordon McAuley, representing exporters of grain.

F. H. Dunsford	}	Representing millers of wheat in the Eastern Division.
C. L. Rogers		
J. R. Heaney	}	Representing grain growers in Ontario.
F. Cryderman		
G. C. Nichols, representing growers of corn.		
P. Blouin, Additional.		
A. Bowman, Additional.		

A P P E N D I X B

Grain Appeal Tribunals

Winnipeg

J. L. A. Doray (Chairman)
J. E. G. Hasell
J. F. Lazenby
Wm. E. McLeod
G. I. Rocan
E. A. Sangster
R. C. Sproule
C. E. Rippin
G. A. Turner
N. Kawka (Secretary)

Toronto

A. D. Clarke
J. Elder
A. C. Gillespie
J. R. Heaney
J. Jervis
S. M. Lockington
A. L. Walker
D. C. Kay, Jr. (Secretary)

Montreal

G. T. Killeen (Chairman)
P. Blouin
S. Brooks
E. B. Paterson
R. Strauss

Miss C. Box (Secretary)

For information on Appeals of Carlot Inspections refer to Appendix D, Table D-6.

APPENDIX C

Statistics Division

E. E. BAXTER, *Chief Statistician*

(A) STATISTICS

The Canada Grain Act, in Section 15 (Subsection 16), empowers the Board to require from all Licensees those records and reports of stocks and handlings deemed necessary for effective supervision and control. From these returns the division compiles and publishes basic statistics relating to the storage and movement of grain within the Canadian elevator system. It prepares audit statements of the operations of all terminal and eastern elevators, verifies the insurance carried on grain stocks and handles the record details relating to the amounts collected as the 1% levy under the Prairie Farm Assistance Act. It supplies for review by the Board a detailed analysis of all grain handlings and co-operates with other Board offices in the maintenance of detailed records of principal operations.

(B) LICENSING

The Canada Grain Act establishes the terms under which any elevator shall be licensed by the Board for the receipt or discharge of any western grain. The Act also specifies the conditions by which grain dealers, track buyers or grain commission merchants must be licensed in order to engage in contracts dealing with western grain by grade name. Such elevator and dealer's licences are issued by the Board through the licensing section of the Statistics Division. This office also supervises the implementation of Section 79-3 by which all such licensees must be secured by bond or otherwise for the performance of all obligations imposed upon them by the Act.

(C) REGISTRATION

Section 127 of the Canada Grain Act requires the operators or managers of public terminal, semi-public terminal and eastern elevators to issue warehouse receipts or transfer receipts for all grain taken into store. Sections 36 and 37 of the Canada Grain Regulations, made by the Board under the provisions of section 15 (22) of the Canada Grain Act, require that all such warehouse receipts or transfer receipts be registered with the Board as to grade and quantity at the time of issue, and that these warehouse receipts or transfer receipts be surrendered to the Board for registration for cancellation when the grain which they represent has been shipped out.

Introductory Comment

The Division maintains a central office in Winnipeg and sub offices at Montreal and Vancouver through which are handled the Division's main functions of Statistics, Licensing, Registration and the maintenance of records. Pursuant to studies conducted late in 1962, the Division's Vancouver office was expanded to include the clerical staff and records and documents functions of the clerical offices formerly maintained by the Inspection and Weighing Divisions of the Board at that point. The amalgamation was designed to achieve certain staff and operational economies and to serve as a pilot operation towards corresponding changes in the Board's offices at Fort William and Montreal. Preliminary organizational work was com-

menced in co-operation with the Administration Branch of the Department of Agriculture relative to the establishment of a similar combined office at Fort William.

The Division worked in close co-operation with related offices of the Canadian Wheat Board and the Grain Division of the Department of Agriculture at Ottawa. It served in certain broad areas as the primary statistical agency for both of these offices. In co-operation with the Accounting Division of the Canadian Wheat Board, the Chief Statistician assisted in the establishment of a special committee of grain trade officers to study accounting procedures, records, documents, and the interchange of the latter within the Canadian grain trade.

(A) STATISTICS

The Division's service as the principal source of Canadian grain storage and handling statistics was performed through the release of regular statistical bulletins, the preparation of special reports and studies and through independent research to meet individual enquiries. The demand for regular and special statistical bulletins and reviews continued at a high level. The Division continued to work in direct co-operation as a statistical agency for the Canadian Wheat Board and as a primary source of Canadian grain statistics for the Agriculture Division of the Dominion Bureau of Statistics. The office supplied both agencies with regular and periodic reports, studies in answer to special requests, and in the case of the Bureau with the primary material for the joint publication—The Grain Trade of Canada. The Division also co-operated with officials of the provincial governments, the railways and the grain companies in the provision of regular and special statistics. Basic Canadian grain handling records were also supplied to the Secretariat of the International Wheat Council, the Commonwealth Economic Committee and the Cereals Section of the Food and Agriculture Organization of the United Nations at Rome. Close liaison was maintained with the Production and Marketing Branch of the United States Department of Agriculture in the interchange of grain statistics and related studies.

The Division continued to serve as the statistical and primary records agency for the Weighing and Inspection Divisions of the Board. Special analytical studies were prepared for the information and guidance of the Board.

The responsibility of the Division under the provisions of the Inland Water Freight Rates Act was met by the scrutiny of vessel charter confirmations covering all lake grain cargoes shipped from Fort William-Port Arthur during the 1963 season. This scrutiny involved examination of charter confirmations covering 783 individual inland cargoes clearing the Canadian Lakehead for Eastern Canadian ports from the initial grain shipment on April 19th to the final lake grain cargo which cleared Fort William-Port Arthur on December 19th. Special reports covering cargo rates and related circumstances were provided for the Director of the Plant Products Division of the Department of Agriculture to assist in the administration of feed grain freight assistance payments. The Chief Statistician worked in close co-operation with the above mentioned officer throughout the latter period of 1963 as consultant in the development of new policy relative to the movement of western feed grains to Eastern Canada.

The records and statements required in connection with grain audits at terminal and eastern elevators under provisions of Sections 139 and 140 of the Canada Grain Act are summarized in Tables C-12 to C-14 inclusive of this appendix. Audit examination was conducted in connection with the

weighover of 2,558 public country elevators. Detail studies and supplementary reports were prepared relative to all audits to assist the Board in its review and to guide the Inspection and Weighing Division in their operational control work.

Under provisions of Section 11 of the Prairie Farm Assistance Act and the authority delegated by the Board to this Division, the office continued to collect the 1% levy on grain purchased by licensees under the Canada Grain Act. During the crop year 1962-63, the total collection involved \$8,614,424.00, an increase of \$1,774,925.00 from collections recorded for the previous crop year.

(B) LICENSING

At December 1, 1962, the close of the initial licensing period of the crop year 1962-63, 5,358 licensees were in force, issued to 82 firms and individuals. Included in these were 36 licences granted to Track Buyers, Commission Merchants and Grain Dealers.

During the course of the crop year 1962-63, 37 licences were cancelled, with all but one of these being public country elevators. In 26 instances, the licence was cancelled because the elevator was to be dismantled, sold or leased. Two elevators on railway abandoned lines were moved to other points, 2 elevators were destroyed by fire and not rebuilt, 4 were converted to annexes, 1 elevator was closed and ceased operations, 1 elevator was unfit for storage and 1 elevator changed its type of licence.

Guarantee bonds in the amount of \$31,375,885.00, executed by 14 approved surety companies, were deposited with the Board as security under Section 79 of the Canada Grain Act to cover operations of licensees during 1962-63. Negotiable Government bonds in the amount of \$1,000.00 were held in lieu of the usual form of surety bond.

As at August 1, 1963, 5,288 elevator licences were in force, with a total storage capacity of 660,465,910 bushels. The total licensed capacities by provinces are: Manitoba 59.3, Saskatchewan 209.6, Alberta 135.6, British Columbia 27.0, Ontario 166.0, Quebec 55.7 and the Maritimes 7.2 million bushels. The major change in the composition of this storage since August 1, 1962 occurred in the Eastern Division where the construction of a new 5.5 million bushel terminal by the National Harbours Board at Montreal and new additions to existing facilities at Sorel, Three Rivers, and Baie Comeau amounting to 4.5 millions were the major factor in an overall increase of 11.0 millions. Additions to a Lakehead terminal elevator increased the semi-public total by 4.7 millions. Public country elevator storage increased 1.3 millions to 368.6 millions although the number of licensed elevators dropped from 5,220 at August 1, 1962 to 5,181 at August 1, 1963. Fractional declines were noted in licensed storage space at mill and private terminal elevators.

At August 1, 1962, 41 "railway abandoned" (R.A.) licences were issued to companies operating public country elevators. During the period August 1, 1962 to August 1, 1963, another 4 elevators were affected by the withdrawal of railway service. During the crop year 1962-63, 11 elevators on abandoned railway lines surrendered their licences. Of these, 8 were dismantled and 3 were moved to other country points. In addition, an abandoned elevator was served by a spur built by a continuing railway line. At the beginning of the 1963-64 crop year, 33 "railway abandoned" public country elevator licences were issued to 33 elevators at 23 different country elevator shipping points.

Since the inception of the railway abandonment policy, a total of 51 public country elevators at 33 different shipping points have been affected.

(C) REGISTRATION

Offices were maintained by the Division at Winnipeg, Montreal and Vancouver, to provide for the daily registration and registration for cancellation of terminal warehouse receipts, eastern warehouse receipts and transfer receipts as submitted by licensees of 40 semi-public terminal elevators and 30 eastern elevators, during the crop year ended July 31, 1963.

The volume of grain (documented) as determined by warehouse receipt registrations and registrations for cancellation, table C-19, for the Lakehead-Churchill group of elevators, reflects increases of 44.2 million and 39.8 million bushels respectively, for all grains, over similar handlings for the previous crop year. Operations for the interior group of elevators show declines in both categories from those of the previous year and of the ten year average. While grain transactions for the Vancouver-Prince Rupert group show declines of 21.9 million and 23.0 million bushels respectively as compared to those of the previous year, these handlings are still considerably higher than the 10-year average. The overall registrations and registrations for cancellation, for all grains, at all points in the Western Division, for the crop year 1962-63, show increases in both categories over those of the previous year. In the Eastern Division, where the inward and outward movement, as compared to that of the previous year, is up by 27.8 million and 3.7 million bushels respectively, it is still 43.4 million and 52.7 million bushels respectively, below the ten year average. This decline is directly attributed to the change over in the pattern of grain movement from transfer to direct shipment through the St. Lawrence Seaway system.

The original data as contained in official reports of grain received or shipped, for elevators in the Western Division, was checked daily to similar reports from licensees and to warehouse receipts registered or registered for cancellation as required. This data was then coded to provide information for machine tabulation of handlings by elevator, grain and grade.

Records of outstanding warehouse receipt totals were maintained, as to elevator, grain and grade, for all semi-public terminals at the Lakehead, Churchill and Interior points, by facsimile posting of tabulated data to ledger cards daily. Similar records were maintained at Montreal and Vancouver. These records were maintained in such manner as to provide totals of handlings under several different categories and of outstanding warehouse receipts for use in connection with the periodic audit of stocks of grain as contained in these elevators, as carried out by Board officials. A further system of records was maintained in all offices to provide a complete registration and cancellation history for all warehouse or transfer receipts issued by licensees and registered with the Board. In the Western Division a constant scrutiny of all stock adjustments, as declared daily by licensees, was maintained to ensure that the non-mixing provisions of the Canada Grain Act and Regulations were observed.

Coupled with the increase in the volume of handlings in the Western Division, an increase was noted in the number of requests received daily from licensees for registration service in connection with splits, consolidations or re-issue of warehouse receipts to cover sales of grain, shipments, stock adjustments, or storage dates, which service constitutes about one-third of the total work of the Registration offices.

Fees for registration service were charged at the rate of 4 cents a thousand bushels for registration and for registration for cancellation in the Western Division and 1 cent a thousand bushels for similar service, in both categories, in the Eastern Division. Total fees collected during the crop year 1962-63 amounted to \$46,932.98 as compared to \$45,354.60 for 1961-62 and \$49,946.23 shown for the 10-year average.

Table C-1—Supply and Disposition of Canadian Grain, Crop Year 1962-63

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
Supply					
Carry-over July 31st, 1962.....	391,058,273	79,066,164	57,824,054	3,788,786	5,268,927
Production in 1962.....	565,554,000	493,610,000	165,888,000	12,044,000	16,042,000
Total Supply	956,612,273	572,676,164	223,712,054	15,832,786	21,310,927
Disposition					
Exported Overseas.....	325,158,653 ¹	18,089,109	8,300,976	6,739,982	12,565,941
Exported to U.S.A.....	2,498,396 ²	2,496,277	2,233,042	569,573	—
Consumed in Canada ³	141,707,983	401,812,292	123,932,730	4,363,832	4,756,817
Total Disposition	469,365,032	422,397,678	134,466,748	11,673,387	17,322,758
Carry-Over (July 31st, 1963)					
On Farms (Estimated).....	64,700,000	92,400,000	28,950,000	550,000	810,000
In Country, Private Terminal and Mill Elevators.....	239,695,910	41,132,124	43,244,226	1,640,945	1,471,485
In Semi-Public Terminal Elevators.....	81,972,517	9,943,931	12,271,831	1,189,035	855,576
In Store and Afloat to Eastern Elevators.....	75,783,371	3,779,277	2,482,091	543,539	548,304
In Eastern Flour Mills.....	2,306,268	294,976	95	—	—
In Transit by Rail—Eastern and Western Division.....	22,789,175	2,728,178	2,297,063	235,880	302,804
In Store and in Transit to the United States.....	—	—	—	—	—
Total in Store July 31st, 1963	487,247,241	150,278,486	89,245,306	4,159,399	3,988,169

¹Includes 26,232,600 bushels wheat flour.

²Includes 1,329,006 bushels wheat flour.

³Includes the following quantities subsequently exported in processed form:

Seed Wheat.....	3,921,214 bushels
Rolled Oats and Oatmeal.....	625,302 bushels
Barley Malt and Pot and Pearl Barley.....	4,842,946 bushels
Linseed Oil.....	429,155 bushels

**Table C-2—Production and Producers' Marketings in Western Canada,
by Provinces, Crop Year 1962-63**

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
Production (DBS Estimate)					
Manitoba.....	80,000,000	89,000,000	21,000,000	3,000,000	7,800,000
Saskatchewan.....	354,000,000	110,000,000	48,000,000	5,000,000	4,100,000
Alberta and British Columbia	114,800,000	127,900,000	92,100,000	2,450,000	3,423,000
Totals.....	548,800,000	326,900,000	161,100,000	10,450,000	15,323,000
Producers' Marketings					
(a) At Country Elevators					
Manitoba.....	61,785,001	31,749,798	12,417,143	2,651,174	6,551,191
Saskatchewan.....	310,754,575	30,808,764	29,375,550	4,996,853	3,789,497
Alberta.....	98,311,058	25,567,922	38,221,197	1,713,730	3,035,638
Totals.....	470,850,634	88,126,484	80,013,890	9,361,757	13,376,326
(b) At Interior Semi-Public Terminals					
Manitoba.....	47,424	117,295	23,457	—	—
Saskatchewan.....	—	—	—	—	—
Alberta.....	217	—	2,874	—	—
Totals.....	47,641	117,295	26,331	—	—
(c) At Interior Private and Mill Elevators					
Manitoba.....	380,954	176,688	127,751	174	59,419
Saskatchewan.....	2,108,494	306,007	37,906	—	61,844
Alberta.....	830,892	233,985	242,953	5,048	26,756
Totals.....	3,320,340	716,680	408,610	5,222	148,019
(d) Loaded over Platforms					
Manitoba.....	18,540	28,591	7,517	1,403	3,291
Saskatchewan.....	34,402	—	2,041	3,182	—
Alberta.....	21,512	—	18,210	—	—
Totals.....	74,454	28,591	27,768	4,585	3,291
Total Producers' Marketings					
Manitoba.....	62,231,919	32,072,372	12,575,868	2,652,751	6,613,901
Saskatchewan.....	312,897,471	31,114,771	29,415,497	5,000,035	3,851,341
Alberta.....	99,163,679	25,801,907	38,485,234	1,718,778	3,062,394
Totals.....	474,293,069	88,989,050	80,476,599	9,371,564	13,527,636

Table C-3—Receipts and Shipments of Canadian Grain at Terminal Elevators, Crop Year 1962-63

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
Fort William-Port Arthur					
Receipts	196,177,395	42,634,803	39,830,389	6,527,423	8,132,787
Shipments	201,818,648	37,752,212	34,842,221	6,545,687	8,703,008
Vancouver-New Westminster					
Receipts	131,536,948	8,770,051	5,170,385	1,666,697	4,924,893
Shipments	129,855,832	9,599,751	5,070,687	1,665,607	4,901,743
Victoria					
Receipts	6,184,868	177	—	—	—
Shipments	6,227,763	43,367	4,535	—	—
Prince Rupert					
Receipts	4,305,791	1,376	1,794	—	—
Shipments	3,553,387	—	110,848	—	—
Churchill					
Receipts	21,507,890	—	—	—	84
Shipments	21,761,757	147,347	—	—	—
Transcona					
Receipts	261,416	117,254	26,206	—	—
Shipments	375,686	55,536	26,487	—	—
Calgary					
Receipts	121,073	—	1,732,598	2,010	3,356
Shipments	648,103	3,019	1,854,313	2,010	3,356
Edmonton					
Receipts	310,568	2,681	10,313	—	8,410
Shipments	540,158	44,557	50,956	—	8,152
Lethbridge					
Receipts	1,509	—	—	—	—
Shipments	392,253	—	—	—	—
Moose Jaw					
Receipts	—	68,359	3,335	—	—
Shipments	129,000	162,729	39,321	—	—
Saskatoon					
Receipts	4,355	—	—	—	—
Shipments	1,430,740	73,860	—	—	—
Total Receipts	360,411,813	51,594,701	46,775,020	8,196,130	13,069,530
Total Shipments	366,733,327	47,882,378	41,999,368	8,213,304	13,616,259

Table C-4—Shipments of Foreign Grain from Canadian Elevators into Canadian Consumer Channels, Crop Year 1962-63

From	United States Oats	United States Barley	United States Corn	United States Soybeans
	bu.	bu.	bu.	bu.
Eastern Elevators	479,726	1,358	21,998,715	1,875,714
Fort William-Port Arthur Terminals	—	—	—	—
Interior Terminals	—	—	—	—
Interior Private and Mill Elevators	—	—	563,059	—
Pacific Coast Terminals	—	—	3,144	—

Table C-5—Primary Receipts and Shipments at Eastern Elevators, Crop Year 1962-63

	Receipts	Shipments
	bu.	bu.
Canadian Grain		
Wheat.....	195,522,537	179,816,291
Oats.....	29,259,001	28,560,261
Barley.....	20,878,096	21,460,370
Rye.....	3,392,813	3,132,291
Flaxseed.....	7,620,157	7,474,065
Corn.....	2,879,347	2,604,952
Buckwheat.....	195,566	193,474
Soybeans.....	3,703,112	3,632,652
Peas.....	89,749	89,746
Sample Grain (lbs.).....	17,948,640	20,512,803
United States Grain		
Wheat.....	16,200,058	15,627,108
Oats.....	522,792	1,636,218
Barley.....	7,024,890	6,911,830
Rye.....	2,620,136	2,518,908
Flaxseed.....	855,169	935,857
Corn.....	69,032,805	73,256,141
Soybeans.....	15,851,573	16,176,480
Beans.....	14,964	14,949

Table C-6—Supply and Disposition of Canadian Grain in United States Positions, Crop Year 1962-63

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
Supply					
In Store and in Transit U.S.A.....	—	—	—	71,000	—
Receipts direct from Canada.....	1,257,435	2,496,277	2,233,042	864,915	—
Total Supply	1,257,435	2,496,277	2,233,042	935,915	—
Disposition					
Exported.....	—	—	—	366,342	—
Returned to Canada.....	88,045	—	—	—	—
Used Domestically.....	1,169,390	2,496,277	2,233,042	569,573	—
Total Disposition	1,257,435	2,496,277	2,233,042	935,915	—
In Store and in Transit July 31, 1963 ..	—	—	—	—	—

Table C-7—Exports of Canadian Wheat, by Seaboard Sectors, by Months, Crop Year 1962-63

	Via Canadian Pacific Seaboard Ports	Via Canadian St. Lawrence Ports	Via Canadian Atlantic Seaboard Ports	Via Churchill	Via Fort William- Port Arthur Direct	United States ¹ Imports	Total All Wheat	Wheat Flour ²	Total Wheat and Wheat Flour
1962	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.
August-----	9,226,516	5,464,803	—	6,524,915	718,087	10,100	21,944,421	2,670,070	24,614,491
September-----	6,384,039	8,342,806	—	10,214,456	96,552	2,000	25,039,853	2,939,034	27,978,887
October-----	10,757,844	14,295,801	—	3,838,253	801,233	12,167	29,705,298	2,451,142	32,156,440
November-----	6,798,490	25,079,115	—	—	1,417,228	13,700	33,308,533	2,158,488	35,467,021
December-----	13,168,737	5,238,392	2,333,019	—	—	208,633	20,948,781	1,770,715	22,719,496
1963									
January-----	15,921,312	—	5,553,480	—	—	11,333	21,486,125	2,233,666	23,719,791
February-----	13,884,094	—	4,886,042	—	—	9,133	18,779,269	1,419,781	20,199,050
March-----	13,931,937	—	5,292,635	—	—	21,197	19,245,769	1,939,270	21,185,039
April-----	16,373,462	11,939,179	593,375	—	—	10,000	28,916,016	2,440,960	31,356,976
May-----	15,858,662	16,853,330	—	—	1,821,184	821,854	35,355,030	2,826,801	38,181,831
June-----	12,043,450	11,653,239	43,062	—	743,621	28,833	24,512,205	2,696,897	27,209,102
July-----	5,174,444	12,199,368	—	1,184,133	2,275,758	20,440	20,854,143	2,014,782	22,868,925
Total Crop Year 1962-63	139,522,987	111,066,033	18,701,613	21,761,757	7,873,663	1,169,390	300,095,443	27,561,606	327,657,049
Total Crop Year 1961-62	149,946,908	120,477,306	21,674,250	19,244,868	9,921,297	1,487,496	322,752,125	31,953,154³	354,705,279
5-Year Average 1957-58 to 1961-62	121,083,353	101,065,862	27,507,951	19,568,834	6,675,938	3,324,447	279,253,744⁴	36,422,136	315,675,880

¹Compiled from returns of Canadian elevator licensees and shippers and advice from American grain correspondents.

²Canadian Customs returns converted to bushels—unadjusted for time lag.

³Revised—adjusted to remove effect of time lag in reports made by the Customs.

⁴Includes exports via U.S. Atlantic Ports (1959-60).

Table C-8—Overseas Exports of Canadian Grain, by Seaboard Sectors, by Grades, Crop Year 1962-63

Grades	Via Canadian Pacific Ports	Via Canadian ¹ St. Lawrence Ports	Via Canadian Atlantic Ports	Via Churchill	Via Fort William- Port Arthur Direct	Total
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat						
1 Manitoba Northern.....	17,895,698	20,663,752	4,483,585	6,366,063	2,313,790	51,722,888
2 Manitoba Northern.....	59,253,709	53,146,105	11,189,606	13,934,296	3,221,574	140,745,290
3 Manitoba Northern.....	31,441,886	12,968,274	445,227	1,373,966	104,578	46,333,931
4 Manitoba Northern.....	15,917,083	4,288,083	163,195	18,667	248,007	20,635,035
No. 5.....	12,391,581	3,468,029	30,973	—	—	15,890,583
Other Red Spring Wheat...	1,623,213	478,321	—	68,765	102,761	2,273,060
Garnet.....	239,867	—	—	—	—	239,867
Alberta Winter.....	759,950	—	—	—	—	759,950
Eastern.....	—	639,439	—	—	—	639,439
1 C.W. Amber Durum.....	—	2,206,756	—	—	133,885	2,340,641
2 C.W. Amber Durum.....	—	3,576,181	—	—	7,467	3,583,648
3 C.W. Amber Durum.....	—	4,621,873	358,092	—	270,078	5,250,043
Ex. 4 C.W. Amber Durum...	—	2,750,119	—	—	623,369	3,373,488
4 C.W. Amber Durum.....	—	2,094,336	2,030,935	—	775,521	4,900,792
Other C.W. Amber Durum...	—	164,765	—	—	72,633	237,398
Totals.....	139,522,987	111,066,033	18,701,613	21,761,757	7,873,663	298,926,053
Oats—						
Ex. 3 C.W.....	—	32,941	—	—	—	32,941
3 C.W.....	—	881,194	267,055	—	1,338,419	2,486,668
Ex. 1 Feed.....	4,319,094	—	—	—	978,229	5,297,323
1 Feed.....	4,360,573	677,811	—	—	4,040,050	9,078,434
Mixed Feed.....	337,812	411,356	69,696	—	155,882	974,746
Eastern.....	—	218,997	—	—	—	218,997
Totals.....	9,017,479	2,222,299	336,751	—	6,512,580	18,089,109
Barley—						
3 C.W. Six Row.....	801,936	69,100	119,663	—	252,557	1,243,256
3 C.W. Two Row.....	225,167	—	—	—	—	225,167
1 Feed.....	3,334,135	515,510	47,510	—	—	3,897,155
2 Feed.....	789,636	660,149	—	—	—	1,449,785
Other Western.....	—	—	—	—	1,485,613	1,485,613
Totals.....	5,150,874	1,244,759	167,173	—	1,738,170	8,300,976
Rye—						
2 C.W.....	1,388,450	620,739	40,612	—	2,214,999	4,335,800 ²
3 C.W.....	242,325	1,284,090	—	—	582,424	2,404,182 ²
Totals.....	1,630,775	1,904,829	40,612	—	2,797,423	6,739,982²
Flaxseed—						
1 C.W.....	4,970,692	4,817,165	434,736	—	1,767,234	11,989,827
2 C.W.....	—	395,369	—	—	17,917	413,286
3 C.W.....	—	—	162,828	—	—	162,828
Totals.....	4,970,692	5,212,534	597,564	—	1,785,151	12,565,941

¹Includes clearances of wheat direct overseas from Kingston.

²Includes clearances from U.S.A. Gulf Ports.

Table C-9—Overseas Exports of Canadian Grain, by Ports, Crop Year 1962-63

Loaded at	Wheat (All varieties)	Oats	Barley	Rye	Flaxseed	Total All Grains
	bu.	bu.	bu.	bu.	bu.	bu.
Vancouver-New Westminster	129,747,805	9,017,479	5,040,026	1,630,775	4,970,692	150,406,777
Victoria	6,221,796	—	—	—	—	6,221,796
Prince Rupert	3,553,386	—	110,848	—	—	3,664,234
Churchill	21,761,757	—	—	—	—	21,761,757
Fort William-Port Arthur	7,873,663	6,512,580	1,738,170	2,797,423	1,785,151	20,706,987
Kingston	1,105,433	—	—	—	—	1,105,433
Montreal	44,180,069	1,642,641	1,057,944	1,904,829	4,678,661	53,464,144
Sorel	19,002,232	—	—	—	293,284	19,295,516
Three Rivers	12,661,952	316,408	186,815	—	102,167	13,267,342
Quebec	8,148,997	95,735	—	—	98,407	8,343,139
Baie Comeau	25,967,350	167,515	—	—	40,015	26,174,880
Saint John	767,182	—	—	—	40,978	808,160
West Saint John	8,726,201	336,751	96,857	40,612	506,113	9,706,534
Halifax	9,208,230	—	70,316	—	50,473	9,329,019
Total—Canadian Ports	298,926,053	18,089,109	8,300,976	6,373,639	12,565,941	344,255,718
U.S.A. Ports	—	—	—	366,343	—	366,343
Totals to Overseas	298,926,053	18,089,109	8,300,976	6,739,982	12,565,941	344,622,061
Wheat Flour ¹	27,561,606	—	—	—	—	27,561,606
U.S.A. Imports ²	1,169,390	2,496,277	2,233,042	569,573	—	6,468,282
Grand Totals	327,657,049	20,585,386	10,534,018	7,309,555	12,565,941	378,651,949

¹Canadian Customs Returns—converted to bushels.

²Compiled from returns of Canadian Elevator licensees and shippers and advice from American grain correspondents.

Table C-10—Tough and Damp Grain Dried, by Storage Position, Crop Year 1962-63

	Artificial Drying			Natural Drying	Total
	Tough	Damp	Tough and Damp		
	bu.	bu.	bu.	bu.	bu.
Lakehead					
Wheat.....	1,874,852	1,673,188	3,548,040	8,511,407	12,059,447
Durum.....	21,343	216,435	237,778	521,538	759,316
Oats.....	162,633	250,781	413,414	3,187,043	3,600,457
Barley.....	14,111	198,386	212,497	2,097,145	2,309,642
Rye.....	—	849	849	41,770	42,619
Flaxseed.....	959,479	1,028,187	1,987,666	534,400	2,522,066
Mixed Grain.....	—	46	46	52	98
Buckwheat.....	—	—	—	18,209	18,209
Totals.....	3,032,418	3,367,872	6,400,290	14,911,564	21,311,854
Pacific Coast					
Wheat.....	502,610	168,377	670,987	3,388,138	4,059,125
Oats.....	—	21,936	21,936	541,669	563,605
Barley.....	8,000	2,932	10,932	204,950	215,882
Rye.....	—	—	—	27,966	27,966
Flaxseed.....	25,654	21,141	46,795	255,323	302,118
Rapeseed.....	—	578	578	12,037	12,615
Mustard Seed.....	—	—	—	1,600	1,600
Totals.....	536,264	214,964	751,228	4,431,683	5,182,911
Interior					
Wheat.....	83	2,005	2,088	26,501	28,589
Oats.....	—	—	—	518	518
Barley.....	—	1,959	1,959	207	2,166
Rye.....	—	—	—	—	—
Flaxseed.....	3,459	2,962	6,421	—	6,421
Mixed Grain.....	—	3,026	3,026	—	3,026
Totals.....	3,542	9,952	13,494	27,226	40,720
Churchill					
Wheat.....	—	—	—	191,305	191,305
Totals, All Positions.....	3,572,224	3,592,788	7,165,012	19,561,778	26,726,790

**Table C-11—Weighted Average Lake Freight Rates on Canadian Grain from
Fort William-Port Arthur, Season of Navigation 1963**

Port of Discharge	Wheat	Oats	Barley	Rye	Flaxseed
		(cents per bushel)			
Georgian Bay Ports, Goderich, Sarnia and Walkerville.....	4.261	3.995	4.244	4.846	—
Port Colborne.....	5.218	5.5	6.032	5.28	—
Toronto.....	6.001	6.0	6.529	6.287	7.0
Kingston.....	6.519	6.0	6.25	—	—
Prescott.....	6.560	6.096	6.337	—	—
Montreal (Direct).....	9.451	7.740	9.243	10.609	11.762
Montreal via Port Colborne.....	11.0	—	—	—	—
Montreal via Kingston.....	11.0	9.5	9.978	—	—
Montreal via Prescott.....	11.0	—	—	—	—
Sorel (Direct).....	9.4	—	—	—	12.166
Sorel via Prescott.....	11.0	8.0	—	—	11.0
Three Rivers (Direct).....	9.544	9.123	10.563	—	11.325
Quebec (Direct).....	9.731	8.154	9.630	12.0	—
Quebec via Prescott.....	11.0	—	—	—	—
Baie Comeau (Direct).....	9.606	8.0	—	9.0	10.0
Halifax.....	14.5	11.706	13.75	—	—
Other Maritime Ports.....	36.613	—	40.9	—	—
Buffalo.....	7.0	5.5	6.716	—	—
Chicago.....	—	—	5.841	7.0	—
Duluth-Superior.....	4.0	—	—	—	—
Manitowoc.....	—	—	6.497	—	—
Milwaukee.....	—	—	5.891	—	—

Note—Rates originally quoted in United States funds have been converted to Canadian currency at the prevailing rates of exchange.

Table C-12—Excesses and Deficiencies in Specified Grades of Wheat Disclosed by Weighovers of Grain Stored in
SEMI-PUBLIC TERMINAL Elevators, Crop Year 1962-63

Date of Weighover	Licensee	EXCESS						DEFICIENCY					
		No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 2 Canada Western Garnet	No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 2 Canada Western Garnet
	Fort William-Port Arthur	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.
Dec. 10-13, 1962	Eastern Terminal Elevator Co. Ltd.	—	—	—	—	—	—	14,793.3	25,051.5	813.5	58,504.7	—	—
Aug. 1-7, 1962	The Fort William Elevator Co. Ltd.	—	—	—	—	—	—	—	59.7	305.5	7,828.0	—	—
	Elevator "F"	—	—	—	—	—	—	—	—	—	—	—	—
	Manitoba Pool Elevators	—	—	—	—	—	—	—	—	—	—	—	—
Jan. 9-10, 1963	Elevator No. 1	—	—	—	—	—	—	—	727.0	5,623.3	13,015.3	—	—
Dec. 12-20, 1962	McCabe Grain Co. Ltd.	—	—	—	—	105.1	—	—	6,207.9	17,016.6	8,050.8	—	—
Dec. 17-21, 1962	National Grain Co. Ltd.	—	—	—	—	—	—	33.4	9,883.3	11,677.0	2,584.6	—	—
	Saskatchewan Wheat Pool	—	—	—	—	—	—	—	—	—	—	—	—
July 11-22, 1963	Elevator No. 5	—	—	—	—	—	—	21.2	5,271.9	9,261.9	8,216.7	—	—
Dec. 17-21, 1962	Elevator No. 7	—	—	—	—	—	—	38.2	25,909.8	39,269.4	5,173.7	—	—
Dec. 17-20, 1962	Elevator No. 8	—	—	—	—	—	—	69.1	7,139.3	9,901.2	2,575.6	—	—
Oct. 3-12, 1962	Searle Grain Co. Ltd.	—	—	216.7	—	—	—	—	3,900.1	—	34,161.9	—	2.0
Jan. 2-15, 1963	Superior Elevator Co. Ltd.	—	—	—	—	—	—	24.5	2,465.4	7,385.1	12,914.5	—	—
Dec. 17-22, 1962	United Grain Growers Ltd. Elevator "A"	—	—	—	—	—	—	—	7,838.7	34,607.2	3,635.9	—	—
Nov. 19- Dec. 6, 1962	Westland Elevator Ltd.	—	—	—	—	—	—	2.8	44,843.7	41,116.4	9,225.6	4.8	—
Aug. 6-20, 1962	Vancouver, B.C.	—	—	—	—	—	—	—	—	—	—	—	—
May 15-21, 1963	Alberta Wheat Pool Burard Terminals Ltd.	—	—	—	—	—	—	—	5,221.7	69,800.7	60,725.9	—	219.2
		—	—	—	—	—	—	—	2,324.1	2,881.8	3,205.0	32.7	2,568.9

**Table C-13—Excesses and Deficiencies in Specified Grades of Wheat Disclosed by Weighovers
of Grain Stored in PRIVATE TERMINAL Elevators, Crop Year 1962-63**

	Excess	Deficiency
	bu.	bu.
No. 1 Manitoba Hard.....	—	—
No. 1 Manitoba Northern.....	—	—
No. 2 Manitoba Northern.....	—	—
No. 3 Manitoba Northern.....	—	—
No. 1 Canada Western Garnet.....	—	—
No. 2 Canada Western Garnet.....	—	—

No wheat of the above grades was handled or in store in the following elevators:

Date of Weighover	Elevator Company	Location
January 29, 1963.....	National Grain Feed Mill.....	Fort William, Ontario

**Table C-14—Overages and Shortages Disclosed by Weighovers of Canada Western
and Foreign Grain Stored in Eastern Elevators, Crop Year 1962-63**

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1963			bu.	bu.
April 1-11	Collingwood Collingwood Terminals Ltd.-----	Canada Western Wheat----- Canada Western Oats----- Canada Western Barley----- Canada Western Screenings-----	----- 1,918.6 ----- -----	1,849.1 ----- 4,935.5 *15,602
April 2-18	Goderich Goderich Elevator and Transit Co. Ltd. ----	Canada Western Wheat----- Canada Western Oats----- Canada Western Barley----- Canada Western Rye----- Canada Western Grain----- Canada Western Screenings-----	----- ----- 389.1 ----- *1,658,860 -----	14,604.8 1,027.0 ----- 17,788.0 ----- *69,945
Mar. 26- April 2	Goderich Upper Lakes Shipping Ltd.-----	Canada Western Wheat----- Canada Western Oats----- Canada Western Barley----- Canada Western Grain----- Canada Western Screenings----- U.S.A. Oats-----	----- ----- ----- *13,695 *9,232 -----	4,413.4 1,949.2 69.4 ----- ----- 433.1
Feb. 25- Mar. 7	Humberstone Robin Hood Flour Mills Ltd.-----	Canada Western Wheat-----	-----	10,721.0
Mar. 8-13	Midland Renown Investments Ltd.-----	Canada Western Wheat-----	-----	1,481.6
Mar. 25-29	Montreal Federee Elevators Ltd..	Canada Western Wheat----- Canada Western Oats----- Canada Western Barley----- Canada Western Grain----- Canada Western Screenings----- U.S.A. Corn-----	----- ----- ----- ----- ----- -----	556.5 250.4 200.3 *3,790 *1,480 711.2
April 15-26	Owen Sound The Great Lakes Elevator Co. Ltd. ---	Canada Western Wheat----- Canada Western Oats----- Canada Western Barley----- Canada Western Rye----- Canada Western Grain----- Canada Western Screenings----- U.S.A. Corn-----	----- ----- ----- ----- ----- ----- -----	8,945.5 1,194.4 1,165.8 12.1 *1,460 *52,560 299.7
Feb. 19-22	Port Colborne Maple Leaf Mills Ltd. -	Canada Western Wheat----- Canada Western Oats----- Canada Western Barley----- Canada Western Rye----- U.S.A. Wheat----- U.S.A. Corn-----	----- ----- ----- ----- ----- -----	7,880.7 86.8 108.5 150.5 65.8 20.0

*Pounds.

**Table C-14—Overages and Shortages Disclosed by Weighovers of Canada Western
and Foreign Grain Stored in Eastern Elevators, Crop Year 1962-63—Concluded**

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1963			bu.	bu.
June 4-5	Port Colborne National Harbours Board-----	Canada Western Wheat-----	—	2,113.5
		Canada Western Oats-----	1,198.6	—
		Canada Western Barley-----	452.1	—
		Canada Western Rye-----	—	88.3
		U.S.A. Wheat-----	—	151.9
		U.S.A. Oats-----	—	40.1
		U.S.A. Corn-----	—	563.6
		U.S.A. Soybeans-----	—	107.9
Mar. 18-22	Quebec National Harbours Board-----	Canada Western Wheat-----	—	6,601.6
		Canada Western Oats-----	—	3,515.7
		Canada Western Barley-----	—	3,166.8
		Canada Western Rye-----	5.6	—
		Canada Western Flaxseed-----	—	61.5
		Canada Western Grain-----	—	*3,030
		Canada Western Screenings-----	—	*10,685
		U.S.A. Oats-----	—	261.5
		U.S.A. Flaxseed-----	—	50.4
April 22-30	Toronto Maple Leaf Mills Ltd.	Canada Western Wheat-----	—	8,228.3
		Canada Western Oats-----	—	3,877.3
		Canada Western Barley-----	—	4,609.9
		Canada Western Rye-----	—	24.8
		Canada Western Flaxseed-----	—	345.6
		U.S.A. Corn-----	—	970.2
		U.S.A. Soybeans-----	—	1,410.1
April 29-30	West Saint John Canadian Pacific Railway Co. Elevator "B"-----	Canada Western Wheat-----	—	1,014.3
		Canada Western Barley-----	—	14.6
		Canada Western Rye-----	—	24.1
		Canada Western Flaxseed-----	—	193.8
		U.S.A. Oats-----	—	45.7
		U.S.A. Corn-----	—	43.4
April 30- May 3	West Saint John Canadian Pacific Railway Co. Elevator "H"-----	Canada Western Wheat-----	—	1,466.0
		Canada Western Oats-----	—	210.5
		Canada Western Barley-----	—	45.9
		Canada Western Flaxseed-----	—	122.5
		Canada Western Peas-----	—	10.1
		U.S.A. Oats-----	—	117.9
		U.S.A. Corn-----	—	69.5
April 17-26	Halifax National Harbours Board-----	Canada Western Wheat-----	—	7,408.3
		Canada Western Oats-----	—	257.5
		Canada Western Barley-----	—	115.6
		Canada Western Flaxseed-----	—	31.9
		Canada Western Screenings-----	—	*500
		U.S.A. Corn-----	—	883.2

*Pounds.

**Table C-15—Amounts Collected under the One Per Cent Levy,
Prairie Farm Assistance Act, Crop Year 1962-63**

Province	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed	Total
	\$	\$	\$	\$	\$	\$	\$
Manitoba-----	789,971.33	134,975.42	109,461.69	22,036.33	150,038.90	7,457.07	1,213,940.74
Saskatchewan---	4,634,879.62	143,390.80	273,210.73	54,996.16	132,419.13	40,932.89	5,279,829.33
*Alberta-----	1,482,977.44	130,805.57	351,689.13	19,308.20	98,332.72	37,541.00	2,120,654.06
Totals-----	6,907,828.39	409,171.79	734,361.55	96,340.69	380,790.75	85,930.96	8,614,424.13
*Includes Peace River area in B.C.							
Penalties on late filing of returns-----							---
Total collections August 1, 1962							
to July 31, 1963-----							8,614,424.13

Table C-16—Licences in Force and Storage Capacity as at August 1, 1963 and a Year Ago

Kind of Licence	Licences in Force August 1		Licensed Storage Capacity August 1	
	1963	1962	1963	1962
Country Elevators-----	5,187	5,226	368,775,200	367,471,300
Terminal and Mill Elevators-----	69	71	172,105,410	167,721,210
Eastern Elevators-----	32	30	119,585,300	108,575,300
Track Buyers, Commission Merchants and Grain Dealers-----	33	35	†	†
Totals-----	5,321	5,362	660,465,910	643,767,810

†These licences do not cover grain storage facilities.

Table C-17—Number and Kind of Licences Issued and Licensed Storage Capacity, as at December 1st each year for the Past Five Years

Kind of Licence	1963	1962	1961	1960	1959
	Number of Licences				
Public Country Elevator.....	5,183	5,214	5,261	5,293	5,304
Private Country Elevator.....	6	6	6	6	8
Mill Elevator.....	25	25	26	27	34
Semi-Public Terminal Elevator.....	40	40	40	40	40
Private Terminal Elevator.....	5	6	6	5	5
Eastern Elevator.....	32	31	32	32	31
Track Buyer.....	14	15	15	18	20
Commission Merchant.....	16	18	19	21	22
Grain Dealer.....	3	3	3	6	5
Totals	5,324	5,358	5,408	5,448	5,469
	Licensed Capacity				
	thousands of bushels				
Public Country Elevator.....	372,288	368,252	371,222	366,636	380,838
Grain Storage Buildings.....	—	—	2,086	7,241	10,157
Private Country Elevator.....	172	157	149	156	232
Mill Elevator.....	12,815	12,791	12,709	12,794	13,637
Semi-Public Terminal Elevator.....	151,394	146,714	146,774	139,974	138,524
Private Terminal Elevator.....	8,067	8,217	8,217	7,720	7,070
Eastern Elevator.....	119,585	111,575	110,955	110,435	97,767
Totals	664,321	647,706	652,112	644,956	648,225

Table C-18—Licensed Elevators and Storage as at December 1, 1963

Kind of Elevator	Ontario	Mani- toba	Saskat- chewan	Alberta	British Colum- bia	Quebec and Mari- times	Totals
	Number of Elevators						
Public Country.....	3	677	2,861	1,623	19	—	5,183
Private Country.....	—	3	1	2	—	—	6
Mill.....	3	6	5	9	2	—	25
Semi-Public Terminal.....	24	2	2	3	9	—	40
Private Terminal.....	2	2	—	1	—	—	5
Eastern.....	18	—	—	—	—	14	32
Totals	50	690	2,869	1,638	30	14	5,291
	Storage Capacity						
	thousands of bushels						
Public Country.....	1,460	48,218	195,812	124,697	2,101	—	372,288
Private Country.....	—	70	22	80	—	—	172
Mill.....	1,480	2,088	4,942	4,117	188	—	12,815
Semi-Public Terminal.....	103,447	6,000	11,000	6,100	24,847	—	151,394
Private Terminal.....	2,974	3,603	—	1,490	—	—	8,067
Eastern.....	56,666	—	—	—	—	62,919	119,585
Totals	166,027	59,979	211,776	136,484	27,136	62,919	664,321

Table C-19—Warehouse Receipt Registrations for Primary and Transfer Receipts and Shipments at Semi-Public Terminal Elevators and Eastern Elevators, by Area and Grain, Crop Year 1962-63 and 10-Year Average

Area	Grain	Crop Year 1962-63		10-Year Average, 1952-53 to 1961-62	
		Registered	Registered for Cancellation	Registered	Registered for Cancellation
			thousands of bushels		
Western Division— Winnipeg, including Lakehead and Churchill	Wheat-----	217,798	223,693	211,063	205,907
	Oats-----	42,126	37,537	50,281	52,629
	Barley-----	33,715	28,831	70,649	71,125
	Flax-----	8,135	8,705	10,339	10,264
	Rye-----	6,529	6,548	7,919	8,011
	Mixed Grain---	104	124	517	399
	Corn-----	—	—	3	4
	Others-----	54	123	178	185
Interior Elevators— Calgary, Edmonton, Lethbridge, Moose Jaw, Saskatoon and Transcona	Wheat-----	699	3,516	4,385	4,102
	Oats-----	188	340	374	375
	Barley-----	1,772	1,971	1,673	1,634
	Flax-----	12	12	194	194
	Rye-----	2	2	27	27
	Mixed Grain---	4	2	2	27
	Corn-----	6	6	12	9
	Others-----	644	1,252	2,200	1,959
Vancouver and Prince Rupert Area	Wheat-----	142,058	139,671	112,373	111,832
	Oats-----	8,797	9,671	1,977	3,064
	Barley-----	5,172	5,186	24,663	24,746
	Flax-----	4,927	4,904	3,788	3,753
	Rye-----	1,667	1,666	466	461
	Mixed Grain---	8	37	24	50
	Corn-----	—	3	1	151
	Others-----	5,559	6,037	3,593	3,504
Western Division— All Points	Wheat-----	360,555	366,880	327,821	321,841
	Oats-----	51,111	47,548	52,632	56,068
	Barley-----	40,659	35,988	96,985	97,505
	Flax-----	13,074	13,621	14,321	14,211
	Rye-----	8,198	8,216	8,412	8,499
	Mixed Grain---	116	163	543	476
	Corn-----	6	9	16	164
	Others-----	6,257	7,412	5,971	5,648
Totals—All Grains -----	-----	479,976	479,837	506,701	504,412
Eastern Division—	Wheat-----	261,272	245,204	302,266	300,378
	Oats-----	30,881	31,194	41,058	41,026
	Barley-----	28,457	28,897	74,703	75,353
	Flax-----	8,641	8,576	18,529	18,523
	Rye-----	6,313	5,952	5,806	5,850
	Mixed Grain---	410	461	505	476
	Corn-----	72,823	76,773	22,529	21,818
	Screenings-----	1,990	2,179	1,939	1,899
	Peas-----	90	90	152	152
	Soybeans-----	21,673	21,761	7,825	7,752
	Buckwheat-----	196	193	314	315
	Others-----	15	15	500	501
Totals—All Grains -----	-----	432,761	421,295	476,126	474,043

APPENDIX D

Inspection Branch

M. J. CONACHER, *Chief Grain Inspector*

Under Section 32 of The Canada Grain Act, the Grain Inspection Branch in the Western Division establishes grades on carlots of grain on samples drawn during unloading by officials of the Inspection Branch at the Lakehead, Pacific Coast, Churchill, Winnipeg, Calgary, Edmonton, Moose Jaw, Saskatoon, Lethbridge, Medicine Hat and Keewatin. Also, all grain shipped from terminal and mill elevators is officially sampled and inspected. At the primary inspection points of Winnipeg, Calgary and Edmonton, samples placed in railway cars by country elevator agents are removed and graded, at shippers' requests.

In the Eastern Division, sampling and grading service is provided on request at Chatham and Toronto for Eastern grown grain. At Montreal, Quebec, Sorel, Three Rivers, Baie Comeau, St. John and Halifax, grain loaded into vessels for export is sampled and reviewed with respect to grade.

Grades of all grain in store in all Terminal and Eastern elevators weighed over during the crop year are verified by officials of the Inspection Branch.

Under Sections 26, 28 and 31 of The Canada Grain Act, the Board holds the Chief Grain Inspector responsible for the collection of samples of grain of the current crop year's crops of western and eastern grain, and from such samples to prepare tentative standard and standard export samples of statutory and commercial grades for submission to the Committees on Grain Standards. The Inspection Branch of the Board also handles the distribution of the standard and standard export samples.

Crop Conditions and Grades, 1962, Western Canada

In 1962, crops produced were extremely wide in range of quality. Spring soil moisture reserves were unusually low, but subsequent rainfall, erratically distributed through the growing season, was well above the long term average over most of the grain producing area. In some districts seeding was delayed by adverse weather, and in other areas lack of spring moisture delayed germination, resulting in second growth that did not mature before harvest time.

Crops generally were late in maturing, and early frosts caused such severe damage that 19.5% of the shipments of red spring wheat were No. 4 Manitoba Northern and lower grade. 13.2% of shipments, however, graded No. 1 Manitoba Northern, with a total of 71.4% No. 3 Manitoba Northern or better, and 8.1% were tough or damp. Amber durums were also damaged by frost, and there was an alarming increase in the incidence of ergot, blackpoint and smudge on account of the wet growing season. 5% of amber durum shipments graded No. 1 Canada Western as compared with 46.2% in the previous crop year. 32.3% of shipments were No. 4 Canada Western Amber Durum and lower.

The barley crop suffered from severe weathering and some frost damage. Compared with the 40% average, only 30.8% of shipments qualified for malting and pearling grades. Weather damage, mildew and frost were the main degrading factors.

54.8% of rye shipments were No. 1 or No. 2 Canada Western, compared with 89.5% in the previous year. The main degrading factors were ergot and smudge.

The flax crop was of good average quality, with 75.9% of shipments grading No. 1 Canada Western. Only 3,179 carlots of rapeseed were inspected in the 1962-63 crop year, a noticeable decline from the 5,086 carlots inspected in the previous crop year.

270 carlots of domestic mustard seed were inspected in the crop year 1962-63, up from 180 carlots in 1961-62; however, the crop was much below average in quality due to weathering and severe frost damage. Field peas were the poorest for many years, being severely frosted, but a large part of the crop was exported despite this fact, because of a worldwide shortage.

Crop Conditions and Grades, 1962, Eastern Canada

In the spring of 1962, weather in the Eastern Division varied from unusually dry through much of Ontario to cold and wet over most of Quebec. Extremely variable weather continued through the growing season, so quality and yield were unusually variable from one district to another.

66.6% of carlots of Canada Eastern winter wheat were graded No. 1 or No. 2. 73.8% of the oats inspected in carlots were No. 3 or No. 4 Canada Eastern. The predominating grade of barley inspected was No. 3 Canada Eastern Six-Row—46.1%.

The quality of corn that was inspected was about normal; 54.9% was graded No. 1 or No. 2 Canada Eastern, dry or extra dry. As usual, the predominating grade of soybeans was No. 2, 51.5%. The quality of edible beans was generally excellent; 89.1% of grades were No. 1 or No. 2 Canada Eastern.

Samples Submitted for Grading

Twenty-two thousand, one hundred and eighty-three (22,183) samples submitted "Subject to Inspector's Grade and Dockage" were inspected during the 1962-63 crop year. This total is nearly double that of the 1961-62 crop year when 11,543 such samples were graded. The most severe frost damage for several years, with resultant low grades in many districts, undoubtedly accounted for the increase in the demands for this service.

Farmers' Complaints and Inquiries on Carlot Shipments

During the crop year 1962-63, the Inspection Branch received 21 requests from farmers to establish whether the identity of special bin grain had been preserved in the handling through country elevators. In 8 instances it was established that the identity of the farmers' grain had not been preserved.

Preparation of Standard Samples

During the harvest season in 1962, 882 samples of Western grain were collected by the Inspection Branch for the preparation of tentative standard and standard export samples. From these, 67 tentative samples were prepared. The Committee on Western Grain Standards established 48 of these as standard samples of statutory grades; 6 as standard samples of commercial grades, and 13 as standard export samples. Distribution was made to 120 organizations and individuals in 45 countries, over and above the distribution in Canada.

In 1963, 784 samples were collected, and a new record high number of 74 tentative samples was prepared for presentation to the Committee. 52 of these were established by the Committee as standard samples of statutory

grades; 9 as standard samples of commercial grades, and 13 as standard export samples. By December 31, 1963, distribution of samples was made to 128 organizations or individuals in 50 countries outside Canada.

Reduced Primary Inspections

When the large grain sales to the USSR were announced, it was apparent that existing grain inspection personnel in the St. Lawrence and Pacific port areas would not be able to cope with the demands for inspection service. When the ports of Halifax and St. John started receiving grain for export, before the close of navigation in the St. Lawrence, experienced inspection personnel had to be sent to the Eastern seaboard from Winnipeg.

Additional trained inspectors had to be found to bolster staffs on the Pacific Coast, to handle the record volume of work that was pending there. The only course open was to assign men from the major interior points to duty at the West Coast, which could be accomplished only if the inspections of cars of grain in transit could be reduced. Further, it was appreciated that if fewer railway cars were held for "primary" inspection (that is, inspection in transit), this would expedite the railroads' deliveries of cars to the port terminals.

The Board, after consultations with the grain trade on means to reduce the demands for primary inspection of cars, decided to assess a fee of \$1.00 per car for this service, to be performed only on request of shippers. This move, after years of providing the service free of charge, had the desired effects. Demand for the service dropped below 10% of cars shipped. Some surplus staff from Winnipeg, Calgary and Edmonton were dispatched to Vancouver; the plan is to send others to port areas in the spring of 1964. The railways reported that they had gained one full day in the time taken to deliver cars to the West Coast, and that several hours are saved in the handling of cars through yards at Winnipeg en route to the Lakehead.

Teletype Service Between Winnipeg and Lakehead

For many years, the Board's Inspection Branch has maintained staffs in railway yards at the Lakehead for the purpose of attaching tags to railway cars showing details including the primary grade, for the information of the railway and elevator companies. The information on these tags included shipping point and shipping company; this is required for the completion of inspection records and other documents. The primary grades shown on the tags were used by the railways and elevator operators in making arrangements for unloading sequences as well as for some diversions of cars.

When the reduction was made in primary inspection service, resulting in a high percentage of cars passing through Winnipeg without inspection in transit, the tags placed on these cars at the Lakehead showed the shipper's grade, which appears on the waybill for each car. With trains being held for less time than previously for inspection at Winnipeg, the time required for transmission of the records to the Lakehead by mail became a bottleneck in railroad operations.

As a result of a study of this problem with the railways, it was decided to set up teletype units for transmission from Winnipeg, of data for tagging of the cars at the Lakehead. To offset the cost of the teletype operations, the railways agreed to take over the work of applying the tags to the cars. These changes, which were put into effect in November, 1963, will result in substantial net savings to the Board.

Collaborative Studies of New Varieties

The Inspection Branch provides a special service to plant breeders of the Department of Agriculture and to the Associate Committee on Grain Research of the National Research Council, by examining and reporting on the kernel characteristics of new varieties and hybrids of wheat and barley.

In the final stages of development of each new variety, a detailed description of the kernel characteristics is given to the plant breeders and the Associate Committee on Grain Research. This is an important factor when a variety is being considered for licensing for sale as seed.

In 1963, over 3,000 samples, representing more than two hundred new varieties and hybrids and selected lines of established varieties, were examined and reported on.

Samples of new varieties are submitted by the plant breeders in the earliest stages of development. These are examined for desirable and undesirable kernel characteristics. This program, which has been greatly expanded in recent years, gives promise of speeding the breeding of new, improved varieties.

An innovation, started in 1962, is the selection of desirable kernel types from samples of the more promising breeding lines. Results obtained in 1963 from this selected material have been extremely encouraging; significant success has been achieved in the reduction of undesirable kernel types by this method.

Collaboration with U.S.A. Grain Inspection Service

The grain inspection branch of the United States Department of Agriculture continued to provide constant service on United States grain at Baie Comeau, and service on some of the United States grain that was handled in other St. Lawrence River ports. Inspection staff of the Board of Grain Commissioners provided the sampling service on this grain, with fees charged to the U.S. Department of Agriculture.

In the 1962-63 crop year, this sampling service covered 3,802,683 bushels of U.S. grain received into Canadian elevators from 18 vessels, and 79,295,316 bushels loaded to 244 vessels. Also 186,124 bushels in bin lots, and 318 railway carlots, were sampled.

During the crop year, 26,700 bushels of U.S. domestic mustard seed were shipped out of Canadian terminals on the Pacific Coast. This seed was sampled and checked by the Board inspection staff; official samples were provided to shippers on request.

Publications

In 1963, the third year of publication of the Official Canadian Grain Grading Guide, demands for this handbook again exceeded expectations, particularly in overseas markets. The first printing of 800 copies of the 1963 edition, which was released in July, had all been disposed of by the end of the calendar year. Demand for the Canadian Grain Inspectors' Manual also increased among people engaged in work related to inspection of grain in various parts of the world.

A supplement to the Canadian Grain Inspectors' Manual, entitled "Automatic Grain Samplers" was published in May, 1963. This handbook, the first official publication of its kind printed in Canada, was intended mainly for use by grain inspectors, but there was considerable demand for it by elevator operators and managers.

A second supplement to the Inspectors' Manual, on "Stored Grain Pests," was ready for printing in December, 1963. This publication, which contains illustrations of most of the important insects that infest grain throughout the world, is the first consolidation of its type that has been available in Canada. It was compiled jointly by the Board's entomologist, Dr. H. E. Gray, and the Chief Grain Inspector. It was designed, with a minimum of technical terms and references, as a guide for grain inspectors and people engaged in the handling of grain, in the identification and control of pests.

Foreign Visits and Visitors

The calendar year 1963 brought a near record number of visitors to the Inspection Branch, including 142 people from 35 different foreign countries. Twelve organized missions visited the head office in Winnipeg, and many of them also visited the Inspection Branch at Lakehead, Vancouver and Montreal.

As in the previous year, the Chief Grain Inspector attended a conference of the National Association of Chief Grain Inspectors and United States Federal Grain Division Supervisors, in March, 1963, to further understanding of mutual problems and maintain the close liaison with U.S. inspection authorities found so valuable in recent years.

In October and November, the Chief Grain Inspector spent three weeks on a trip to the United Kingdom and western continental Europe, and met with importers and processors in thirteen cities. Some of these calls were made to follow up on complaints from buyers; others were made to study reactions to the grading of specialty products such as rapeseed, domestic mustard seed and peas, that show real promise of becoming increasingly important to Canadian agriculture. As in the case of previous overseas trips, information of inestimable value was obtained, toward the end of more realistic grading in relation to the buyers' real quality requirements.

While in western Europe, the Chief Inspector received instructions from the Board to proceed to Moscow to deal with the Russians over complaints that had been received from them over shipments of grain from Canada. The initial complaints were over weevils (which it is believed did not originate in Canadian grain), some types of weed seeds (which are "quarantined" from parts of the USSR, which do occur in Canadian grain, and which the Russians understood could not be completely avoided even in cleaned grain), and out-turn weights (not pursued very seriously by the Russians); these complaints were apparently dealt with satisfactorily.

After the Chief Inspector's arrival in Moscow, he was told about whole and broken glass bottles having been found by Russian inspectors in grain from Canada. This complaint, having been dealt with at government level, is mentioned in this report only as a matter of record.

Public Relations in Canada

Over 230 Canadians paid their first visit to the head offices of the Grain Inspection Division during the year 1963. These included producers, country elevator agents and superintendents, and other people interested in grading or handling of grain.

Thirteen addresses were delivered in conferences or meetings outside of government organizations, by the Chief Inspector and the Assistant Chief Inspector, in 1963. Total attendance was estimated as over 2,200 including a large preponderance of farmers.

Staff Training

Canadian grain inspectors are required to be more skilled than ever in the past. Identification of varieties by kernel characteristics, which was a minor factor in grading, a generation ago, is extremely important as more and more new varieties are introduced. More refined grades of rapeseed and domestic mustard seed require skills that were once confined to laboratories, but were virtually unknown in grain inspection offices. More refined equipment demands more highly trained personnel. The training that is required must be obtained on the job; no educational institute provides it. New recruits are given particularly intensive training during a probationary period of employment.

The program is organized and directed by a Special Assistant to the Chief Grain Inspector. A senior inspector in each field unit acts as local staff training officer; thus staff training is carried on as nearly continuously as work loads permit. Examinations of all working-level inspectors are conducted annually through the entire inspection system, under the personal direction of the Special Assistant.

Intensification of this program has resulted in marked improvement in the qualifications of staff, including veterans in the service. More and better potential is being developed for management personnel; and the Department has more comprehensible information available for appraising employees competing for promotion.

WESTERN DIVISION

Table D-1—Carlot Inspections by Points, Crop Year 1962-63, Compared with 1961-62

	1962-63	1961-62	1962-63	1961-62
			percent of total	
Fort William.....	144,780	128,655	54.0	48.0
Winnipeg.....	8,185	9,688	3.0	3.6
Churchill.....	10,859	10,005	4.5	3.7
Moose Jaw.....	2,182	3,185	0.8	1.2
Saskatoon.....	5,214	7,369	1.8	2.8
Calgary.....	4,246	4,780	1.6	1.8
Edmonton.....	661	1,187	0.2	.4
Medicine Hat.....	1,622	2,180	0.6	.8
Lethbridge.....	295	185	0.1	.1
Prince Rupert.....	2,358	4,681	0.8	1.8
Vancouver.....	87,547	96,084	32.6	35.8
Totals.....	267,949	267,999	100.0	100.0

Table D-2—Carlot Inspections, Crop Year 1962-63

Grade	Carlots	Percentage	Percentage of Total Wheat Inspected
WHEAT			
1 Hard.....	66	*	—
1 Manitoba Northern.....	25,127	13.2	—
2 Manitoba Northern.....	79,509	42.0	—
3 Manitoba Northern.....	30,796	16.2	—
4 Manitoba Northern.....	23,583	12.4	—
No. 4 Special.....			—
No. 5.....	11,813	6.2	—
No. 6.....	1,804	0.9	—
Feed.....	20	*	—
Garnet.....	127	*	—
Tough.....	12,736	7.2	—
Damp.....	1,096	0.6	—
Smutty.....	17	*	—
Rejected.....	2,581	1.3	—
Others Red Spring.....	94	*	—
Total Red Spring Wheat.....	189,369	100.0	91.4
1 Canada Western Amber Durum.....	847	5.0	—
2 Canada Western Amber Durum.....	2,487	14.7	—
3 Canada Western Amber Durum.....	5,752	34.0	—
Extra 4 Canada Western Amber Durum.....	2,362	14.0	—
4 Canada Western Amber Durum.....	3,778	22.4	—
5 Canada Western Amber Durum.....	723	4.3	—
6 Canada Western Amber Durum.....	7	*	—
Tough Durum.....	375	2.2	—
Others Durum.....	565	3.4	—
Total Amber Durum Wheat.....	16,896	100.0	8.2
Total Soft White Spring Wheat.....	294	—	—
Total Mixed Wheat.....	68	—	—
Total Alberta Winter Wheat.....	456	—	.4
Total All Wheats.....	207,083	—	100.0

Table D-2—Carlot Inspections, Crop Year 1962-63—Continued

Grade	Carlots	Percentage
OATS		
1 Canada Western	—	—
2 Canada Western	66	0.3
Extra 3 Canada Western	961	5.0
3 Canada Western	5,717	29.3
Extra 1 Feed	3,935	20.2
1 Feed	6,171	31.6
2 Feed	321	1.7
3 Feed	35	0.2
Mixed Feed	47	0.2
Tough	2,082	10.7
Damp	130	0.6
Rejected	20	0.1
Others	23	0.1
Total Oats	19,508	100.0
BARLEY		
1 Canada Western Six Row	—	—
2 Canada Western Six Row	177	0.7
3 Canada Western Six Row	6,313	25.6
1 Canada Western Two Row	22	0.1
2 Canada Western Two Row	220	0.9
3 Canada Western Two Row	855	3.5
1 Feed	11,586	46.8
2 Feed	1,647	6.7
3 Feed	215	0.9
Tough	3,441	13.9
Damp	121	0.4
Rejected	137	0.5
Others	8	*
Total Barley	24,742	100.0
RYE		
1 Canada Western	102	2.3
2 Canada Western	2,294	52.5
3 Canada Western	1,821	41.6
4 Canada Western	45	1.2
Ergoty	42	0.9
Tough	46	1.4
Damp	1	*
Rejected	1	*
Others	7	0.1
Total Rye	4,359	100.0
FLAXSEED		
1 Canada Western	6,041	75.9
2 Canada Western	109	1.3
3 Canada Western	38	0.4
4 Canada Western	1	*
Tough	1,159	14.6
Damp	595	7.5
Rejected	19	0.2
Others	5	0.1
Total Flaxseed	7,967	100.0

Table D-2—Carlot Inspections, Crop Year 1962-63—Concluded

Grade	Carlots	Percentage
Corn.....	92	—
Mixed Grain.....	85	—
Screenings.....	520	—
Buckwheat.....	26	—
Peas.....	4**	—
Rapeseed.....	3,179	—
Sample Grain.....	93	—
Safflower Seed.....	—	—
Mustard Seed.....	270	—
Sorghum (U.S.A. Origin).....	—	—
Condemned Grain.....	21	—
Grand Total.....	267,949	—

*Less than 0.05%.

**All figures above include carlots that were officially inspected at unloading. In addition, there were 91 carlots of peas inspected in transit at Winnipeg.

Table D-3—Carlots of Tough, Damp and Straight Grain Inspected, Crop Year 1962-63

Grain	Tough	Damp	Tough and Damp	Straight	Total
Wheat.....	13,111	1,096	14,207	192,876	207,083
Oats.....	2,082	130	2,212	17,296	19,508
Barley.....	3,441	121	3,562	21,180	24,742
Rye.....	46	1	47	4,312	4,359
Flaxseed.....	1,159	595	1,754	6,213	7,967
Totals.....	19,839	1,943	21,782	241,877	263,659
Others.....	—	—	—	—	4,290**
All Grains.....	—	—	—	—	267,949
Percentage of Total					
	%	%	%	%	%
Wheat.....	6.3	0.5	6.8	93.2	100.0
Oats.....	10.7	0.6	11.3	88.7	100.0
Barley.....	13.9	0.5	14.4	85.6	100.0
Rye.....	1.1	*	1.1	98.9	100.0
Flaxseed.....	14.5	7.4	21.9	78.1	100.0
Principal Grains.....	7.5	0.7	8.2	91.8	100.0
Others.....	—	—	—	—	100.0**

*Less than 0.05%.

**Details not available.

Table D-4—Number of Two-Pound Samples "Subject to Grade and Dockage" Inspected, Crop Year 1962-63 compared with Crop Year 1961-62

Point	1962-63	1961-62
	Number of Samples	
Winnipeg.....	14,429	5,702
Calgary.....	1,738	1,289
Edmonton.....	3,545	2,240
Moose Jaw.....	168	32
Saskatoon.....	457	116
Lethbridge.....	1,846	2,164
Totals.....	22,183	11,543

Table D-5—Carlots Re-Inspected, Crop Year 1962-63

Point	Inspected	Re-Inspected	Un-Changed	Grades Raised	Grades Lowered	Dockage Raised	Dockage Lowered
Fort William.....	144,780	13,960	12,671	1,230	12	24	23
Winnipeg.....	8,185	418	250	148	17	1	2
Churchill.....	10,859	487	465	21	1	—	—
Moose Jaw.....	2,182	282	263	14	5	—	—
Saskatoon.....	5,214	680	592	71	12	—	5
Calgary.....	4,246	347	277	67	1	1	1
Edmonton.....	661	54	48	4	1	—	1
Medicine Hat.....	1,622	123	91	30	1	1	—
Lethbridge.....	295	5	4	1	—	—	—
Prince Rupert.....	2,358	79	75	3	—	—	1
Vancouver.....	87,547	12,651	11,486	1,068	36	9	52
Totals.....	267,949	29,086	26,222	2,657	86	36	85
Percentage of Total Cars.....	100.0	10.85	9.78	1.00	.03	.01	.03
Percentage of Re-Inspections							
Fort William.....	—	100.0	90.7	8.8	.1	.2	.2
Winnipeg.....	—	100.0	59.8	35.4	4.1	.2	.5
Churchill.....	—	100.0	95.5	4.3	.2	—	—
Moose Jaw.....	—	100.0	93.3	5.0	1.7	—	—
Saskatoon.....	—	100.0	87.1	10.4	1.8	—	.7
Calgary.....	—	100.0	79.8	19.3	.3	.3	.3
Edmonton.....	—	100.0	88.8	7.4	1.9	—	1.9
Medicine Hat.....	—	100.0	74.0	24.4	.8	.8	—
Lethbridge.....	—	100.0	80.0	20.0	—	—	—
Prince Rupert.....	—	100.0	94.9	3.8	—	—	1.3
Vancouver.....	—	100.0	90.8	8.4	.3	.1	.4
Totals.....	—	100.0	90.2	9.1	.3	.1	.3

Table D-6—Summary of Carlot Inspections Appealed, Crop Year 1962-63

Item	Winnipeg		*Calgary		Total	
	Cars	Percent	Cars	Percent	Cars	Percent
Left as Graded.....	840	95.9	47	88.7	887	95.4
Grades Raised.....	29	3.3	6	11.3	35	3.9
Grades Lowered.....	7	0.8	—	—	7	0.7
Totals.....	876	100.0	53	100.0	929	100.0
Total Cars Inspected.....					267,949	100.0
Total Appeals.....					929	0.3
Total Grades Changed.....					42	0.02

*Calgary Appeal Tribunal Office closed September 30, 1962.

Table D-7—Vessel Shipments Inspected, Crop Year 1962-63

Grain	Fort William and Port Arthur	Vancouver	Victoria	Prince Rupert	Churchill	Total
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat.....	201,923,154	129,695,538	6,297,747	3,553,387	21,913,397	363,383,223
Oats.....	35,493,110	9,017,479	—	—	147,347	44,657,936
Barley.....	29,113,200	5,040,025	—	110,848	—	34,264,073
Rye.....	6,438,087	1,630,825	—	—	—	8,068,912
Flaxseed.....	8,210,003	4,970,694	—	—	—	13,180,697
Buckwheat.....	31,860	—	—	—	—	31,860
*Sample Grain.....	271,349	—	—	—	—	271,349
*Screenings.....	1,739,218	107,107	—	—	169,333	2,015,658
*Canada Rapeseed.....	—	5,671,171	—	—	—	5,671,171
*Mustard Seed.....	—	444,292	—	—	—	444,292
*Mustard Seed (U.S.A. Origin) ..	—	26,700	—	—	—	26,700
Totals.....	283,219,981	156,603,831	6,297,747	3,664,235	22,230,077	472,015,871

*In bushels of 50 lbs.

**Table D-8—Carlot Shipments ex Terminal and Mill Elevators Inspected,
Crop Year 1962-63**

Grain	Winnipeg	Fort William and Port Arthur	Calgary	Edmonton	Moose Jaw
Wheat.....	229	265	359	330	174
Oats.....	186	775	25	91	52
Barley.....	290	615	1,057	13	11
Flaxseed.....	3	312	2	4	12
Rye.....	—	31	1	—	—
Mixed Grain.....	9	—	2	—	4
Corn.....	—	—	—	1	—
Buckwheat.....	—	11	—	—	—
Peas.....	9	—	—	—	—
Screenings.....	331	3,494	157	12	43
Rapeseed.....	—	32	42	355	—
Sample Feed Grain.....	45	—	3	—	2
Mustard Seed.....	1	—	—	—	—
Sample Grain.....	—	16	27	—	35
Totals.....	1,103	5,551	1,675	806	333
	Saskatoon	Lethbridge	Medicine Hat	Vancouver, Victoria and Prince Rupert	Churchill
Wheat.....	802	217	1	51	—
Oats.....	62	—	—	204	—
Barley.....	—	—	—	17	—
Flaxseed.....	—	—	10	3	—
Rye.....	—	—	—	17	—
Mixed Grain.....	4	—	—	19	—
Corn.....	—	—	—	1	—
Buckwheat.....	—	—	—	—	—
Peas.....	—	—	—	—	—
Screenings.....	287	—	26	1,876	—
Rapeseed.....	123	—	—	3	—
Sample Feed Grain.....	—	—	—	10	—
Mustard Seed.....	—	1	—	4	—
Sample Grain.....	49	—	—	2	—
Totals.....	1,327	218	37	2,207	—

EASTERN DIVISION

Table D-9—Carlot Inspections Eastern Grain, Crop Year 1962-63, by Grains and Points

Grain	Montreal	Toronto	Chatham	Total
Wheat.....	11	307	2,075	2,393
Oats.....	41	10	350	401
Barley.....	—	4	241	245
Rye.....	—	—	24	24
Mixed Grain.....	—	—	1	1
Buckwheat.....	—	—	1	1
Corn.....	—	4	1,710	1,714
Beans.....	—	—	292	292
Soybeans.....	—	132	1,699	1,831
Flaxseed.....	—	12	5	17
Totals.....	52	469	6,398	6,919

Table D-10—Carlot Inspections Eastern Grain, Crop Year 1962-63, by Grains, Grades and Points

WHEAT				
Grain	Montreal	Toronto	Chatham	Total
1 Canada Eastern White Winter.....	2	16	457	475
2 Canada Eastern White Winter.....	—	116	846	962
3 Canada Eastern White Winter.....	2	2	109	113
4 Canada Eastern White Winter.....	—	—	20	20
5 Canada Eastern White Winter.....	—	—	3	3
1 Canada Eastern Mixed Winter.....	—	3	80	83
2 Canada Eastern Mixed Winter.....	—	1	62	63
3 Canada Eastern Mixed Winter.....	—	—	9	9
4 Canada Eastern Mixed Winter.....	7	—	1	8
Tough.....	—	163	464	627
Smutty.....	—	1	—	1
Weevilly.....	—	3	2	5
Damp.....	—	—	2	2
Sample.....	—	2	20	22
Totals.....	11	307	2,075	2,393
OATS				
2 Canada Eastern White.....	—	—	15	15
3 Canada Eastern.....	—	3	136	139
4 Canada Eastern.....	4	6	133	143
5 Canada Eastern.....	—	—	25	25
Tough.....	37	1	30	68
Weevilly.....	—	—	1	1
Sample.....	—	—	10	10
Totals.....	41	10	350	401
BARLEY				
2 Canada Eastern Six Row.....	—	—	8	8
3 Canada Eastern Six Row.....	—	—	113	113
2 Canada Eastern Two Row.....	—	—	26	26
3 Canada Eastern Two Row.....	—	—	11	11
4 Canada Eastern.....	—	—	76	76
5 Canada Eastern.....	—	1	1	2
Tough.....	—	—	5	5
Sample.....	—	3	1	4
Totals.....	—	4	241	245
RYE				
2 Canada Eastern.....	—	—	8	8
3 Canada Eastern.....	—	—	12	12
4 Canada Eastern.....	—	—	1	1
Tough.....	—	—	3	3
Totals.....	—	—	24	24
MIXED GRAIN				
4 Canada Eastern.....	—	—	1	1
Totals.....	—	—	1	1

**Table D-10—Carlot Inspections Eastern Grain, Crop Year 1962-63,
by Grains, Grades and Points—Concluded**

Grain	Montreal	Toronto	Chatham	Total
BUCKWHEAT				
2 Canada Eastern.....	—	—	1	1
Totals	—	—	1	1
CORN				
Extra Dry 1 Canada Eastern Yellow.....	—	—	206	206
1 Canada Eastern Yellow.....	—	—	412	412
Extra Dry 2 Canada Eastern Yellow.....	—	3	118	121
2 Canada Eastern Yellow.....	—	1	199	200
Extra Dry 3 Canada Eastern Yellow.....	—	—	22	22
3 Canada Eastern Yellow.....	—	—	44	44
Extra Dry 4 Canada Eastern Yellow.....	—	—	6	6
4 Canada Eastern Yellow.....	—	—	4	4
5 Canada Eastern Yellow.....	—	—	3	3
Tough.....	—	—	164	164
Damp.....	—	—	217	217
Moist.....	—	—	291	291
Wet.....	—	—	24	24
Totals	—	4	1,710	1,714
BEANS				
Extra 1 Canada Eastern Pea.....	—	—	36	36
1 Canada Eastern Pea.....	—	—	210	210
2 Canada Eastern Pea.....	—	—	13	13
1 Canada Eastern Light Red Kidney.....	—	—	1	1
Tough.....	—	—	30	30
Damp.....	—	—	2	2
Totals	—	—	292	292
SOYBEANS				
1 Canada Yellow.....	—	—	125	125
2 Canada Yellow.....	—	103	841	944
3 Canada Yellow.....	—	1	19	20
4 Canada Yellow.....	—	—	1	1
5 Canada Yellow.....	—	—	1	1
Tough.....	—	23	577	600
Damp.....	—	4	123	127
Moist.....	—	—	12	12
Wet.....	—	1	—	1
Totals	—	132	1,699	1,831
FLAXSEED				
1 Canada Eastern.....	—	9	5	14
Tough.....	—	2	—	2
Damp.....	—	1	—	1
Totals	—	12	5	17
Totals, All Grains	52	469	6,398	6,919

Table D-11—Cargo Inspections, Eastern Grain, Crop Year 1962-63

Grain	St. John and Halifax	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.	bu.
Wheat.....	—	345,283	—	521,494	866,777
Flaxseed.....	—	10,082	—	—	10,082
Soybeans.....	18,666	186,141	228,121	2,288,538	2,721,466
Totals.....	18,666	541,506	228,121	2,810,032	3,598,325

Table D-11A—Cargo Inspections, Western Grain, Crop Year 1962-63

Grain	St. John and Halifax	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.	bu.
Flaxseed.....	597,560	966,671	—	—	1,564,231
Buckwheat.....	—	150,647	—	—	150,647
Peas.....	16,180	59,828	—	—	76,008
Totals.....	613,740	1,177,146	—	—	1,790,886

**Table D-12—Inspections, Eastern Grain in Bins, Trucks or Warehouses,
Crop Year 1962-63**

Grain	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.
Wheat.....	253,337	—	840	254,177
Oats.....	138,877	—	—	138,877
Corn.....	—	—	4,885	4,885
Beans.....	—	—	353,113	353,113
Soybeans.....	2,901	—	2,441	5,342
Totals.....	395,115	—	361,279	756,394

**Table D-12A—Inspections, Western Grain in Bins, Trucks or Warehouses,
Crop Year 1962-63**

Grain	Montreal	Toronto	Chatham	Total
Peas.....	2,641	—	—	2,641
Totals.....	2,641	—	—	2,641

Table D-13—Inward and Export Cargoes Sampled and Grade Checked, Crop Year 1962-63

	Montreal	Sorel	Three Rivers	Quebec	Halifax and St. John	Baie Comeau	Total
Eastern Grain	bu.	bu.	bu.	bu.	bu.	bu.	bu.
Inward	1,730,893	—	—	—	—	—	1,730,893
Export	2,833,906	—	112,502	—	147,941	—	3,094,349
Western Grain							
Inward	16,640,883	1,014,012	841,848	—	—	784,666	19,281,409
Export	57,808,231	19,291,487	13,267,320	8,343,133	19,209,609	24,867,515	137,787,295
Totals	74,013,913	20,305,499	14,221,670	8,343,133	19,357,550	25,652,181	161,893,946

Table D-14—Grain Sampled but not Inspected, Crop Year 1962-63

	Montreal	Toronto and Chatham	Sorel, Three Rivers and Quebec	Halifax and St. John	Baie Comeau	Total
Eastern Grain						
Carlots	10	—	—	—	—	10
Inward Cargoes (bu.)	71,404	—	—	—	—	71,404
Outward Cargoes (bu.)	466,343	—	—	—	—	466,343
Bin Lots (bu.)	650,701	3,201	—	—	—	653,902
Western Grain						
Carlots	318	—	—	—	—	318
Inward Cargoes (bu.)	67,505	296,205	36,805	—	784,666	1,185,181
Outward Cargoes (bu.)	1,350,793	—	—	650,591	—	2,001,384
Bin Lots (bu.)	328,022	—	—	—	870,711	1,198,733
U.S.A. Grain						
Carlots	318	—	—	—	—	318
Inward Cargoes (bu.)	3,453,300	—	349,383	—	—	3,802,683
Outward Cargoes (bu.)	17,448,629	—	21,117,422	261,749	40,467,516	79,295,316
Bin Lots (bu.)	172,128	—	13,996	—	—	186,124
Totals—Cars	646	299,406	21,517,606	912,340	42,122,893	88,861,070
—Bushels	24,008,825					

APPENDIX E

Grain Weighing Branch

H. C. BRITTON, *Chief Weighmaster*

Under the provisions of Sections 33 and 124, of The Canada Grain Act, all grain received into or shipped from licensed terminal elevators is weighed under supervision of the Board's weighing staffs. Weighing services are also provided at licensed mill elevators in the Western Division.

During the Crop Year 1962-63 services were provided at 45 semi-public and private terminal elevators, and when required, at 27 mill elevators in the Western Division. Weighing services were also provided at Baie Comeau.

All scales and equipment for transferring grain to scales on receipt and from scales for shipment in all licensed terminal elevators and serviced mill and Eastern elevators were regularly inspected under the provisions of Section 92 of the Act.

In accordance with the special arrangement with the Standards Branch of the Department of Trade and Commerce, all scales in licensed terminal and Eastern elevators were inspected, verified and stamped by the Board's scale inspectors acting as inspectors under the Weights and Measures Act.

Special inspections were made when any doubt arose as to the accuracy of a scale.

Newly constructed elevator facilities and alterations to elevators and grain handling equipment were inspected by officials of the Branch to ensure that no condition existed which might affect the accuracy of the weighing of grain received at or shipped from these elevators.

The Branch maintained a close check on reported outturns at Eastern elevators of cargoes loaded at Lakehead elevators, and thorough investigations were made in cases where complaints were received relating to reported excessive outturn shortages. Detailed reports of the results of these investigations were submitted to the Board.

Under the provisions of Sections 139 and 140 of the Canada Grain Act, weighovers were conducted at 27 terminal elevators and 14 Eastern elevators, and results were submitted to the Board for comparison with records of outstanding warehouse receipts.

The program of staff training undertaken in 1962 has shown very gratifying results, not only at the Lakehead but throughout the system, and can be evaluated by the marked improvement shown when competitions for promotion are held. The candidate's knowledge of the position for which he is applying is excellent. This staff training program will be intensified during the winter months.

In 1963 the Board authorized the Weighing Branch to release a revised set of Rules and Regulations relative to the weighing of grain in licensed terminal elevators. The new regulations were designed to keep pace with the expansion and modernization program in elevator facilities at the Lakehead. A new modern terminal was completed and in operation in July of 1963, equipped with five large capacity scales, pneumatically operated, a modern shipping gallery, and two grain car dumpers capable of handling over one hundred cars per eight-hour shift. This new construction, coupled with the modernization and expansion of other terminal facilities, has increased the terminal storage space at Fort William/Port Arthur to 106 million bushels with handling equipment capable of unloading an estimated 1500 box cars per day and shipping to vessels an estimated four million bushels during the same period.

Summaries of grain weighed during the crop year, and other related information, are given in the tables attached to this Appendix.

Table E-1—Gross Quantities of all Grains Weighed at Terminal Elevators in the Western Division during 1962-63 Crop Year

Point	Wheat	Oats	Barley	Rye	Flaxseed	Canadian Corn	Canadian Buckwheat	Rapeseed	Miscellaneous
	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	lb.
RECEIPTS									
Fort William-Port Arthur	200,422,516	43,381,237	41,207,798	6,666,414	9,061,005	—	54,367	1,569	48,697,797
Vancouver-New Westminster	135,614,684	8,919,084	5,240,365	1,723,870	5,704,620	—	—	5,464,707	89,155,548
Victoria	6,425,251	177	—	—	—	—	—	—	—
Prince Rupert	4,469,689	1,376	1,813	—	—	—	—	—	3,890
Churchill	21,927,850	—	—	—	—	—	—	—	—
Calgary	121,082	—	1,733,352	2,010	—	—	—	98,319	117,180
Edmonton	311,022	2,681	10,325	—	3,356	6,299	—	366,275	—
Lethbridge	1,509	—	—	—	9,688	—	—	—	—
Moose Jaw	—	68,389	3,337	—	—	—	—	179,797	—
Saskatoon	4,570	—	—	—	—	—	—	—	—
North Transcona	265,765	119,536	26,585	—	—	—	—	—	343,400
Total Receipts	369,563,938	52,492,480	48,223,575	8,392,294	14,778,753	6,299	54,367	6,110,667	138,317,815
SHIPMENTS									
Fort William-Port Arthur	201,931,842	37,891,961	35,748,648	6,547,642	8,864,735	—	53,908	71,589	378,270,728
Vancouver-New Westminster	129,866,038	9,616,398	5,070,715	1,665,607	4,973,946	—	—	5,672,808	448,053,278
Victoria	6,252,515	53,661	4,535	—	—	—	—	2,020	10,528,670
Prince Rupert	3,553,387	1,070	110,848	—	—	—	—	—	7,072,940
Churchill	21,761,757	147,347	—	—	—	—	—	—	8,466,630
Calgary	648,103	3,019	1,854,313	2,010	3,356	—	—	89,209	551,540
Edmonton	540,158	44,557	50,956	—	8,229	5,992	—	894,777	1,873,590
Lethbridge	392,253	—	—	—	—	—	—	—	—
Moose Jaw	129,000	162,729	39,321	—	—	—	—	—	87,000
Saskatoon	1,430,740	73,860	—	—	—	—	—	276,605	504,350
North Transcona	375,976	55,556	26,506	—	—	—	—	—	286,000
Total Shipments	366,881,769	48,050,158	42,905,842	8,215,259	13,850,266	5,992	53,908	7,007,008	855,694,726

Table E-2—Number of Cars Leaking and Cars with Missing Seals at the Lakehead, Other Points and at Winnipeg Yards, by Railways, for the Crop Year 1962-63

Destination	Cars Leaking		Missing Seals	
	C.N.R.	C.P.R.	C.N.R.	C.P.R.
Lakehead Elevators	15,044	13,854	1,154	1,078
Other Points	8,238	4,687	1,876	1,009
Totals	23,282	18,541	3,030	2,087
Totals—Both Railways	41,823		5,117	
Winnipeg Yards	118	446	274	195

Table E-3—Number of Cars Weighed at all Points and Percentages of such Cars found Leaking or with Defective Seals, Crop Years 1961-62 and 1962-63

	Number		Percentage of Total	
	1962-63	1961-62	1962-63	1961-62
Cars Weighed in	270,047	270,195	100.0	100.0
Inward Cars Leaking	41,823	39,255	15.4	14.5
Inward Cars with Missing or Defective Seals	5,117	5,473	1.8	2.0
Cars Weighed Out	13,982	14,793	—	—

Table E-4—Average Reported Outturn Shortages on Vessel Shipments of Grain from Fort William-Port Arthur to Canadian and United States Ports during the 1962-63 Crop Year

Grain	Bushels Shipped	Shortage in Pounds per 1,000 bushels	
		1962-63	1961-62
CANADIAN PORTS			
Wheat	170,294,699	39.80	37.75
Durum Wheat	21,956,849	46.49	35.17
Oats	28,660,088	25.84	23.63
Barley	25,450,070	40.12	36.05
Rye	2,829,246	67.24	59.06
Flaxseed	6,427,249	49.77	44.82
Buckwheat	31,860	34.50	—
Sample Grain (in lbs.)	17,964,225	.87 lbs. per 1000 lbs.	.68 lbs. per 1000 lbs.
Screenings (in tons)	43,420	2.07 lbs. per ton	1.56 lbs. per ton
UNITED STATES PORTS			
Wheat	1,097,085	121.59	42.22
Oats	619,529	73.44	—
Barley	2,073,549	50.71	55.77
Rye	867,168	87.58	65.37
TOTAL CANADIAN AND UNITED STATES PORTS			
Wheat	171,391,784	40.32	37.81
Durum Wheat	21,956,849	46.49	35.17
Oats	29,279,617	26.84	23.63
Barley	27,523,619	40.91	41.45
Rye	3,696,414	72.01	59.61
Flaxseed	6,427,249	49.77	44.82
Buckwheat	31,860	34.50	—
Sample Grain (in lbs.)	17,964,225	.87 lbs. per 1,000 lbs.	.68 lbs. per 1,000 lbs.
Screenings (in tons)	43,420	2.07 lbs. per ton	1.20 lbs. per ton

APPENDIX F

The Grain Research Laboratory

G. N. IRVINE, *Director*

Section 22 of the Canada Grain Act requires that "The Board shall maintain an efficient and adequately equipped laboratory for research work in relation to grain".

Following is a summary of the Laboratory's work for 1963. It deals with the quality of grain marketed in 1962-63, the estimated quality of the 1963 crops, variety testing, research and other related activities. A separate annual report is prepared by the Laboratory to put on record data on the quality of Canadian grain and progress made in research.

Quality of Grain Marketed in 1962-63

During the 1962-63 crop year, the Laboratory maintained a systematic study of the quality of red spring wheat, durum wheat, barley, flax and rapeseed and other cereal grains at various stages of marketing. As has been the practice in previous years, the detailed data will be reported in the Laboratory's 1963 Annual Report.

Well over forty per cent of the red spring wheat unloaded at terminal elevators in 1962-63 was No. 2 Northern while most of the rest was distributed fairly evenly amongst No. 1, No. 3 and 4 Northern; about 6% graded No. 5 wheat. Average protein content for the principal grades was 14.1% and bushel weight was about 62 lb. Compared with that of the previous crop year, No. 1 and No. 2 Northern marketed in 1962-63 was much the same in bushel weight, protein content and baking strength while No. 3 and No. 4 Northern were significantly higher in these properties. A comparison of the quality of wheat exported from the three seaboard areas shows that bushel weight was highest for Churchill exports while protein content for No. 1, No. 2 and No. 3 Northern was highest for Pacific exports. Baking strength for the top three grades was highest for Pacific and Churchill exports.

In contrast to last year, there was an ample supply of durum wheat in 1962-63. Compared with durum wheat marketed in 1961-62, protein content was slightly lower but kernel weight was substantially higher; macaroni quality was excellent and rheological properties of the dough were satisfactory. Due to widespread frost damage to the 1962 barley crop the quality of malting barley marketed in 1962-63 was disappointing and poorer than that marketed in the previous crop year. Flax shipments were slightly higher in average quality and rapeseed shipments were much the same in quality compared with those of the previous crop year.

Estimated Quality of the 1963 Crops

This spring, moisture reserves were low at seeding time over many areas of the Prairies but general rains came early and the crop got off to a good start. During the early part of the growing season there was continued widespread heavy rainfall; exceptions were in southern Alberta which did not receive the early rains and in the Peace River district which, this year, suffered from a general drought. Nevertheless, over most of the grain-growing area the crop showed a heavy growth. The optimistic outlook for record breaking yields was only tempered somewhat when a period of hot weather occurred during the latter part of July. However, harvesting weather was

favourable and over-all yields were well above average. Estimated production of the 1963 western crops are: red spring wheat, 650 million bushels; amber durum wheat, 53.4 million bushels; barley, 213 million bushels; flax, 20.3 million bushels, and rapeseed, 8.9 million bushels. It is estimated that 83% of the red spring wheat will grade No. 2 and No. 3 Northern while 13% will fall into the lower grades. Average bushel weight is somewhat lower than last year but average protein content (14.3%) is the third highest level on record. Compared with 1962-63 fourth quarter Pacific cargoes, the new crop from the Western Prairies (Alberta and western Saskatchewan) is somewhat lower in bushel weight and kernel weight but equally high in protein content. The high protein levels are reflected in high baking strength and supporting value which are nearly equal to the cargo average for No. 2 and No. 3 Northern and are higher for No. 4 Northern. Compared with 1962-63 fourth quarter Atlantic cargoes, the new crop grades from the Eastern Prairies (Manitoba and Saskatchewan) are somewhat lower in bushel weight and kernel weight but higher in protein content which is reflected in higher baking strength and supporting value. Accordingly, the 1963 Western Canada wheat crop is slightly lower in milling quality but about equal in baking quality compared with 1962-63 wheat.

The estimated durum wheat production is more than double that of the 10-year average production of 24.3 million bushels. About 70% of the 1963 crop will grade No. 2 and No. 3 C.W. Average protein content is 14.3% and average bushel weight is 64.0 lb. Compared with last year's crop, the 1963 crop is higher in protein content and percentage of vitreous kernels, though lower in bushel weight and kernel weight; ash content is somewhat higher for the lower grades. Macaroni quality is equal to the high quality of last year's wheat. Compared with the 1962-63 cargo averages, the new crop is somewhat superior in macaroni quality.

Barley production in 1963 was considerably higher than for some years. It is estimated that about 25% of the crop will grade No. 3 C.W. Six-row and higher and 8% No. 3 C.W. Two-row and higher. A large proportion of the crop was subjected to a spell of high temperature during final stages of growth and some kernels did not mature properly. As a result, the new crop is lower in yield of plump barley and slightly higher in nitrogen for the Six-row grades than last year. Enzymatic activity is good and malt extract levels will compare well with last year's levels as the crop is much sounder with better balance of enzymes. The 1963 Two-row grades are lower in nitrogen content than last year. Also, for the first time, the Two-row grades are lower in nitrogen content than the Six-row grades. There will be a sufficient supply of malting barley to meet current demands for domestic use and for export.

The 1963 flax crop is of good quality though average oil content (41.5%) is slightly lower than last year. The 1963 rapeseed crop is nearly double the 10-year average of 5.1 million bushels; average oil content is 42.9% which is about equal to the high average level of last year.

Bulletins and Maps

Information on the quality of the different grades of the 1963 western grain crop was presented at the October meeting of the Committee on Western Grain Standards, and later in the fall was published as maps, crop bulletins and press releases, i.e., a preliminary and final protein map, one bulletin on wheat, one on barley and one on flax and rapeseed. Distribution of these publications is through the Laboratory's mailing list and over the counter. In addition, the bulletin "Canadian Wheat" is distributed by Canadian

Government Trade Commissioners, who receive their supply by airmail, and by the Canadian Wheat Board. This bulletin gives information on the new wheat crop from both the Western Prairie and Eastern Prairie regions which correspond to areas that supply grain to Pacific and Atlantic export sectors; some information in this bulletin is given in French, German and Spanish.

The bulletins on wheat cargoes continue to be published each quarter; four bulletins on red spring wheat cargoes and four on durum wheat cargoes were issued during the 1962-63 crop year. In addition to English, these bulletins give information in French, German and Spanish; there is also an English-Japanese edition for red spring wheat cargoes. The bulk of these publications are distributed by Canadian Government Trade Commissioners who receive their supply by airmail.

This year, a combined total of 42,000 bulletins were printed.

Service to the Grain Inspection Branch

As in the past, the Laboratory worked closely with the Grain Inspection Branch throughout the year. The principal areas of collaboration were in providing quality tests on samples used to make up Standard and Standard Export samples, supervision of moisture-testing equipment located at all Board's Inspection offices, and in tests of unlicensed varieties of commercially grown wheat of questionable quality, e.g., over 500 samples of wheat suspected of containing the inferior variety Prairie Pride were tested for sedimentation value this year.

Other recurring work undertaken for the Inspection Branch included tests for possible contamination with mercurial fungicides, lipoxidase determination on durum wheat, and fatty acid tests on oil seeds. In addition to the analytical determinations on grain samples, the Laboratory provided a variety of services in the workshop, drawing and photographic sections.

Variety Testing

Each year the Laboratory participates in a program of detailed quality tests of plant breeders' varieties of bread wheats, macaroni wheats and malting barleys. These studies, sponsored by the Associate Committee on Grain Research, are designed to maintain and to improve the level of quality of these cereal crops. Twenty-five varieties of spring wheat, 13 varieties of durum wheat and 30 varieties of barley were processed in these tests last year.

Arising out of such tests, two new varieties of wheat were licensed for commercial production in Canada. Park is an early maturing spring wheat variety suited particularly for the northern growing areas of Western Canada. Stewart 63, a new variety of durum wheat, is similar to the earlier variety Stewart in all its quality characteristics but is resistant to race 15B of stem rust.

Detailed milling and baking quality tests of Canadian grown wheats from the Uniform Quality Nursery were again carried out to provide, in part, quality data for wheats serving as parental stocks in the wheat breeding program. This series also serves as a place for a re-evaluation of milling and baking quality in terms of our current concepts of varieties which were at one time wheats of commerce in Western Canada.

The Laboratory continues to collaborate with the Crop Quality Council of the United States in quality testing of spring and winter wheats which are being considered as possible wheats of commerce in that country. Twenty-one winter wheats and 20 spring wheats were included in this year's program.

Pilot malting tests were made on three barley hybrids that had shown promising malting quality and good hull adherence in early tests. The malts were brewed by the Brewing and Malting Barley Research Institute. The results of these tests will be considered by the Associate Committee on Grain Research at its 1964 meeting.

Service to Other Organizations

As in the past, technical advice and laboratory service has been given to the Canadian Wheat Board, Trade Commissioners, other Government agencies, Universities and grain companies. The Laboratory worked closely with the Technical Services and Market Research Department of the Canadian Wheat Board; quality information on other world wheats entering the European markets was periodically provided and technical personnel of the department were briefed on the quality of Canadian wheat at various positions and on other matters prior to commencing visits to overseas markets.

The Laboratory co-operated with Australian cereal chemists in a study of baking methods, with scientists of the University of Saskatchewan producing new varieties by a cloning technique, and with members of the International Association for Cereal Chemists in studies of various methods for assessing quality of cereal grains. Active participation in the work of the American Association of Cereal Chemists, the Association of Operative Millers, and other professional organizations was continued.

Research

Research aimed at a better understanding of the fundamental as well as of applied aspects of Canadian cereal grains is continuing.

Experiments based on the behavior of dough and batter towards a slowly rotating multipin stirrer have provided interesting information on the mechanism of dough formation. Batter from untreated flour winds up readily on the stirrer, while batter from flour treated with chemical improving agents requires longer mixing time to form a continuous system in dough and to wind up on the stirrer.

A series of studies has been carried out to elucidate the reaction mechanisms of various flour improvers including bromate, iodate, acetone peroxides (Keetox), and azodicarbonamide (Maturox). Their improving action is mainly through the oxidation of sulfhydryl groups of dough. This finding indicates the importance of the sulfhydryl group in determining dough properties. With the improved methods developed in the Laboratory for the determination of sulfhydryl and disulfide contents in flour, different amounts of these two chemical groups have been detected in three different types of wheat. Whether this difference can be related to quality differences of wheat is the subject of further study.

During the year, sensitive methods based on the technique of ion-exchange chromatography have been developed for the separation of individual proteins from wheat flour. With these methods fundamental studies of the effects of different dough mixing procedures, and also quality variations between wheat varieties differing in quality will be undertaken.

Three beta-amylase enzymes have been isolated and purified from wheat flours. As these enzymes form a significant fraction of the total flour proteins, work is continuing in studying their effect on the properties of dough and bread.

The functional role of the -SH groups in relation to dough properties has long been stressed. Experimental evidence has now been obtained by radioactive tracer and chromatographic techniques that demonstrates unequivocally

that -SH groups are directly involved in dough formation and in the improver action.

No obvious differences were found in the amino acid composition of flours obtained from soft, hard red spring, and durum, Canadian wheats. This emphasizes the need for studying the structure of the proteins themselves. The amino acid compositions obtained in this study should be very useful in determining the dietary importance of wheat flour from a nutritional viewpoint.

In research on durum wheat attention is being given to the development of undesirable brown color in macaroni from some of the lower grades of Canadian durum and some foreign durum wheats. Two components in the water-soluble fraction of semolina have been found to be responsible for the browning.

Extensive studies of the baking performance of Canadian wheat flour, alone and in blends with relatively weaker flours, have been made employing baking methods and conditions used in some of the current and potential market areas for Canadian wheat. Such work is providing a useful background of information on the ability of Canadian grains to satisfy the varied practices and requirements of our diverse markets.

The Laboratory, as a member of the International Association for Cereal Chemistry, organized a collaborative study of the Zeleny Sedimentation Test for wheat quality. In another area, the Laboratory, together with several milling laboratories in France, took part in a collaborative study of the physical properties of Canadian wheat varieties and wheat grades using the Chopin Alveograph.

The long-term study of the changes occurring during prolonged storage of milled products, flour and farina, is continuing. A second smaller-scale storage experiment has been initiated to pursue in greater detail some observations from the long-term study on the changes in sulfhydryl content of flour.

In barley research, the protein complex in barley and malt that is similar in character to the chill haze complex in beer has been studied further. Fractionation and starch gel electrophoresis have shown that the complex is composed of anthocyanogens and protein, that are themselves heterogeneous and arise from barley. These components interact during malting and brewing and the changes during processing are being studied. Relations between these components and the quality of varieties will be investigated. Gibberellic acid, a plant growth activator, has been used to study development of enzymes during germination and growth of barley. Certain metabolic processes are stimulated by addition of gibberellic acid. In particular, production of alpha-amylase activity is accelerated, and alpha-amylase appears to be synthesized during malting but beta-amylase is released from a bound form of the enzyme.

Overseas Visits and Visitors

In the spring, Dr. Irvine attended the Durum and Macaroni meetings of the Association for Cereal Research, Detmold, Germany, and in the fall he again travelled to Europe to attend meetings of the Technical Committee of the International Association for Cereal Chemistry held in Vienna, Austria. On these occasions, he also visited various laboratories, mills and bakeries in Europe and the United Kingdom and met with officials of the Canadian Wheat Board and the Department of Trade and Commerce.

Missions, sponsored by the Canadian Wheat Board, from Japan, Malta and France visited the Laboratory as did a Swiss Co-operative Milling group, a mission from China and an FAO-Rockefeller Foundation Wheat and Barley group from the Near East. Other visitors included three scientists from the

USSR and visitors from Australia, Bulgaria, Czechoslovakia, El Salvador, England, Finland, Guatemala, Japan, Norway, Scotland, U.S.A. and Yugoslavia.

Staff

After Dr. Anderson was appointed Director of the Research Station, Canada Department of Agriculture, Winnipeg, he continued to act as Director of the Board's Laboratory pending appointment of his successor. Early in the year, Dr. Irvine was appointed Director of the Board's Laboratory, and at about the same time Dr. Anderson received the appointment as Director General, Research Branch, Canada Department of Agriculture, Ottawa. Dr. Anderson directed the Laboratory for 23 years; he expanded the Laboratory's activities and increased the staff from twenty to sixty. His ability in selecting and training a high calibre staff mainly accounts for the worldwide recognition the Laboratory has today.

Dr. B. I. Sahai Srivastava resigned his position in the Laboratory to accept a teaching position at the Tuskegee Normal and Industrial Institute, Tuskegee, Alabama, U.S.A. Two N.R.C. Postdoctorate Fellowship positions, tenable in the Laboratory, were filled by Dr. K. H. Tipples from the University of Birmingham, England, and by Dr. H. G. Muller from Spillers Limited, Technological Station, Cambridge, England. There were three resignations and five additions in the sub-professional staff. The summer student positions were filled by Mr. Gordon DeWolfe and Mr. Barry Oliver.

APPENDIX G

Canadian Government Elevators

A. H. WILSON, *General Manager*

In accordance with Section 166 of the Canada Grain Act and Order-In-Council P.C. 1372 of August 19, 1925, the Board manages and operates five interior terminal elevators at Moose Jaw, Saskatoon, Calgary, Edmonton and Lethbridge, and one terminal elevator at Prince Rupert.

During the 1962-63 crop year, the elevators continued to operate as semi-public terminals. The elevator at Port Arthur, which had been leased to the McCabe Grain Company since August 1, 1933, was sold to this Company on August 1, 1962.

The following report deals with the 1962-63 crop year unless otherwise indicated.

Handlings

There was a sharp reduction in handlings during 1962-63, from those of the previous year. Receipts were 7.2 million bushels (17.9 million in 1961-62) while shipments were 10.3 million bushels (20.1 million 1961-62). Stocks in store dropped from nine million on July 31, 1962, to six million on July 31, 1963.

Although stocks were reduced slightly, Moose Jaw still has over three million bushels in store. In Saskatoon, almost a million and a half bushels of wheat were shipped, with no new receipts, resulting in stocks dropping to half of what they were a year ago. Only at Calgary was the level of receipts maintained at the 1961-62 figure, almost two million bushels in each year. Shipments in 1962-63 however, exceeded those of the previous year, so that there has been a reduction in stocks. At Edmonton, receipts are down by almost two-thirds. Shipments were slightly higher than a year ago, so that here too stocks were very sharply reduced. The only activity at the Lethbridge elevator was the shipment of all of its stocks.

Since the resumption of activities at the Prince Rupert elevator in 1951, that plant had been used exclusively for the cleaning and shipment of barley overseas. In 1962-63 it reverted to the shipment of wheat. In 1961-62, there were receipts of ten million bushels and shipments of ten million bushels. In 1962-63, these figures dropped to 4.3 million and 3.6 million respectively.

Wheat was the principal grain handled in 1962-63, with receipts of 4.7 million bushels and shipments of 6.7 million bushels. It is followed by barley, of which 1.7 million bushels were received and slightly over two million bushels were shipped. Thus, wheat and barley comprise 90% of the total receipts and 85% of the total shipments. The next largest handling was that of Rapeseed of which just over 600,000 bushels were received and one and a quarter million bushels shipped. This is a marked decrease from the previous year when 2.3 million bushels of Rapeseed were received and 1.8 million bushels shipped. Relatively small quantities of oats, flax and corn were handled. No rye was handled.

Receipts and shipments by elevators were as follows:

Elevator	Capacity	Stocks August 1, 1962	Net Receipts	Net Shipments	Stocks July 31, 1963
	million bu.	bu.	bu.	bu.	bu.
Moose Jaw	5.50	3,413,542	71,694	331,050	3,154,186
Saskatoon	5.50	3,184,159	168,235	1,779,801	1,572,593
Calgary	2.50	1,019,775	1,949,390	2,599,145	370,020
Edmonton	2.35	1,031,789	660,962	1,516,067	176,684
Lethbridge	1.25	390,745	1,668	392,253	160
Prince Rupert	1.25	113,721	4,301,122	3,665,384	749,459
TOTALS	18.35	9,153,731	7,153,071	10,283,700	6,023,102

Charges

The charges for services - storage, elevation, cleaning, drying, etc., were in accordance with the maximum tariff of charges established by the Board, with the following exceptions:

Storage: Charges for storage at interior elevators are 1/45c instead of 1/30c per bushel per day. This does not apply to rape-seed and mustard seed for which the maximum of 1/30c is charged. (At Prince Rupert, the charge is also the maximum of 1/30c).

Elevation: The only departure from the maximum tariff, is in the case of Special Bin Rapeseed, where the charge is 2½c instead of 5c.

Maintenance

The two major maintenance projects carried out by our Repair and Reconstruction crew were at Prince Rupert and Lethbridge, where the deteriorated waterproofing was removed, and the bin surfaces covered with new waterproof paint. Only minor concrete repairs had to be made, as major concrete restoration was carried out at these plants less than ten years ago. Concrete repair work was continued at the Edmonton plant where this work will be completed next year. Once this elevator is painted, the concrete restoration program will be complete.

Replacement of rails, ties and track ballast was continued at the Saskatoon Elevator. The new washroom facilities were completed at Prince Rupert. The electric lighting modernization program is now complete and all elevators now have modern electric lighting distributing systems.

At Edmonton, two storm sewers were constructed to replace the old open-ditch drainage system. A portion of the cost was assumed by the City of Edmonton.

At Prince Rupert, extensive replacements were made to cyclones, dock spouts and winches, and fender logs and repairs were carried out to the gallery roof. The outside surface of the dock warehouse was covered with aluminum sheathing.

Staff

Staff employed at December 31, 1963, compared with December 31, 1962, is as follows:

	1963		1962	
	Continuing Establish- ment	Casuals	Continuing Establish- ment	Casuals
Winnipeg (Head Office)	8	—	8	—
Moose Jaw	30	—	32	—
Saskatoon	30	2	31	6
Calgary	26	4	30	6
Edmonton	32	1	32	—
Lethbridge	19	—	19	—
Prince Rupert	23	31	32	—
Repair and Reconstruction Unit	3	—	3	—
Totals	171	38	187	12

Revenue and Expenditure

Revenue and expenditure for the fiscal year 1962-63 compared with the previous fiscal year, were as follows:

	1962-63	1961-62
Revenue	\$1,063,460	\$1,991,360
Expenditure	1,314,027	1,567,594
Surplus or Deficit	250,567 (Deficit)	423,766

For the first nine months of the 1963-64 fiscal year, cash revenue was \$1,659,577 and expenditure was \$968,179.

APPENDIX H

Table H-1—EXPENDITURE, by Point, Branch and General Item, Fiscal Year ended March 31, 1963

Point and Branch	Salaries	Rent	Travel	General	Total
	\$	\$	\$	\$	\$
Winnipeg					
Executive—Salaries of Commissioners-----	42,246.19	—	—	—	42,246.19
Executive—General-----	68,716.87	13,571.30	9,267.81	9,338.11	100,894.09
Assistant Commissioner-----	13,629.96	570.00	1,656.63	1,153.24	17,009.83
Research Laboratory-----	277,738.53	39,850.15	6,053.89	75,000.44	398,643.01
Statistics-----	179,885.27	17,238.41	1,617.04	41,273.39	240,014.11
Appeal Tribunal-----	8,848.38	164.50	999.79	1,323.11	11,335.78
Standards Committee-----	—	—	1,614.62	1,050.00	2,664.62
Inspection-----	601,923.56	31,062.07	7,291.36	59,191.24	699,468.23
Weighing-----	57,500.57	1,971.66	1,531.09	487.64	61,490.96
Churchill					
Inspection-----	20,336.45	15.60	5,089.94	306.81	25,748.80
Weighing-----	16,354.74	10.40	3,858.47	116.08	20,339.69
Keewatin					
Inspection-----	6,400.18	—	—	—	6,400.18
Weighing-----	6,931.84	—	462.50	30.25	7,424.59
Saskatoon					
Assistant Commissioner-----	13,670.31	338.94	3,154.50	290.08	17,453.83
Inspection-----	41,498.59	1,422.28	166.80	1,304.15	44,391.82
Weighing-----	32,925.83	—	173.92	62.50	33,162.25
Moose Jaw					
Inspection-----	14,309.89	—	939.85	306.97	15,556.71
Weighing-----	18,425.10	—	—	11.61	18,436.71
Regina					
Assistant Commissioner-----	11,373.50	1,715.00	2,423.72	288.95	15,801.17
Medicine Hat					
Inspection-----	—	—	—	—	—
Weighing-----	12,098.14	—	494.09	23.10	12,615.33
Lethbridge					
Inspection-----	9,900.00	—	189.25	250.71	10,339.96
Weighing-----	5,160.00	—	—	6.00	5,166.00
Calgary					
Inspection-----	115,920.86	6,409.00	378.96	6,090.31	128,799.13
Weighing-----	55,568.12	594.00	2,175.63	281.45	58,619.20
Appeal Tribunal-----	4,760.00	493.50	—	543.98	5,797.48
Edmonton					
Inspection-----	119,896.48	10,644.00	1,832.88	20,209.26	152,582.62
Weighing-----	16,901.29	—	150.80	31.23	17,083.32
Appeal Tribunal-----	—	—	—	—	—
Assistant Commissioner-----	14,289.96	1,992.00	2,551.91	681.62	19,515.49
Vancouver					
Inspection-----	308,826.53	9,046.79	4,489.90	14,188.21	336,551.43
Weighing-----	238,533.84	3,457.89	1,648.57	1,855.23	245,495.53
Statistics-----	14,759.52	2,353.27	224.39	448.37	17,785.55
Victoria					
Inspection-----	19,368.58	—	38.65	24.57	19,431.80
Weighing-----	9,799.74	—	—	—	9,799.74

**Table H-1—EXPENDITURE, by Point, Branch and General Item, Fiscal Year
ended March 31, 1963—Concluded**

Point and Branch	Salaries	Rent	Travel	General	Total
	\$	\$	\$	\$	\$
Prince Rupert					
Inspection.....	8,504.06	—	1,338.44	151.14	9,993.64
Weighing.....	12,067.41	—	—	40.00	12,107.41
Fort William					
Inspection.....	889,051.53	25,224.00	7,935.21	30,726.60	952,937.34
Weighing.....	715,974.18	4,884.00	17,837.05	4,983.48	743,678.71
Toronto					
Inspection.....	10,325.21	1,200.00	1,247.37	414.11	13,186.69
Weighing.....	—	—	—	—	—
Chatham					
Inspection.....	38,550.61	4,320.00	9,244.74	1,272.90	53,388.25
Ottawa					
Inspection.....	13,853.30	—	3,323.95	56.61	17,233.86
Montreal					
Inspection.....	144,897.39	5,645.00	19,050.25	5,164.22	174,756.86
Weighing.....	10,632.38	1,166.00	126.30	329.78	12,254.46
Statistics.....	19,023.96	2,400.00	—	1,007.31	22,431.27
Baie Comeau					
Inspection.....	16,225.83	—	1,868.04	135.41	18,229.28
Weighing.....	—	—	—	—	—
Totals.....	4,257,604.68	187,759.76	122,448.31	280,450.17	4,848,262.92

**Table H-2—ACCRUED REVENUE, by Point and Branch, Fiscal Year
ended March 31, 1963**

Point and Branch	Fees	Samples Sold	Other Revenue (a)	Total
	\$	\$	\$	\$
Winnipeg				
Executive.....	—	—	—	—
Statistics.....	51,204.80	—	50.00	51,254.80
Appeal Tribunal.....	1,686.00	—	—	1,686.00
Research Laboratory.....	—	—	—	—
Inspection.....	277,513.94	8,245.54	4,031.40	289,790.88
Weighing.....	19,127.41	—	851.58	19,978.99
Churchill				
Inspection.....	65,513.97	—	—	65,513.97
Weighing.....	33,589.08	—	—	33,589.08
Keewatin				
Inspection.....	3,173.35	—	107.42	3,280.77
Weighing.....	5,108.35	—	123.68	5,232.03
Saskatoon				
Inspection.....	21,857.28	609.56	—	22,466.84
Weighing.....	11,136.78	—	—	11,136.78
Moose Jaw				
Inspection.....	6,304.90	187.86	—	6,492.76
Weighing.....	3,405.19	—	210.90	3,616.09

**Table H-2—ACCRUED REVENUE, by Point and Branch, Fiscal Year
ended March 31, 1963—Concluded**

Point and Branch	Fees	Samples Sold	Other Revenue (a)	Total
	\$	\$	\$	\$
Medicine Hat				
Inspection	3,152.00	—	—	3,152.00
Weighing	9,662.53	—	268.22	9,930.75
Lethbridge				
Inspection	2,562.35	92.57	—	2,654.92
Weighing	359.47	—	—	359.47
Calgary				
Inspection	97,023.86	2,092.03	919.75	100,035.64
Weighing	19,584.07	—	311.12	19,895.19
Appeal Tribunal	663.00	—	—	663.00
Edmonton				
Inspection	114,863.95	2,622.29	769.44	118,255.68
Weighing	3,169.84	—	162.45	3,332.29
Appeal Tribunal	—	—	—	—
Vancouver				
Inspection	339,355.94	11,611.72	422.45	351,390.11
Weighing	260,424.17	—	750.83	261,175.00
Statistics	13,508.79	—	—	13,508.79
Victoria				
Inspection	9,964.35	242.11	—	10,206.46
Weighing	7,749.01	—	—	7,749.01
Prince Rupert				
Inspection	6,035.79	132.71	—	6,168.50
Weighing	4,669.09	—	—	4,669.09
Fort William				
Inspection	529,833.97	10,736.77	1,118.33	541,689.07
Weighing	407,111.19	—	3,396.05	410,507.24
Toronto				
Inspection	6,321.88	141.00	83.72	6,546.60
Weighing	—	—	—	—
Chatham				
Inspection	33,886.89	647.59	1,023.33	35,557.81
Montreal				
Inspection	12,356.77	444.54	2,131.41	14,932.72
Weighing	—	—	—	—
Statistics	7,775.44	—	—	7,775.44
Baie Comeau				
Inspection	3,586.00	—	2,119.97	5,705.97
Weighing	452.10	—	2,264.12	2,716.22
Totals	2,393,693.50	37,806.29	21,116.17	2,452,615.96

(a) Details in Table H-4.

Table H-3—Accrued Revenue and Net Expenditure, by Points and Branches, Fiscal Year ended March 31, 1963

	Inspection	Weighing	Appeal Tribunals	Statistics	Research Laboratory	Grain Standards Commit- tees	Adminis- tration	Executive, Salaries of Commis- sioners	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$
REVENUE									
Winnipeg-----	289,790.88	19,978.99	1,686.00	51,254.80	—	—	—	—	362,710.67
Churchill-----	65,513.97	33,589.08	—	—	—	—	—	—	99,103.05
Keewatin-----	3,280.77	5,232.03	—	—	—	—	—	—	8,512.80
Saskatoon-----	22,466.84	11,136.78	—	—	—	—	—	—	33,603.62
Moose Jaw-----	6,492.76	3,616.09	—	—	—	—	—	—	10,108.85
Regina-----	—	—	—	—	—	—	—	—	—
Medicine Hat-----	3,152.00	9,930.75	—	—	—	—	—	—	13,082.75
Lethbridge-----	2,654.92	359.47	—	—	—	—	—	—	3,014.39
Calgary-----	100,035.64	19,895.19	663.00	—	—	—	—	—	120,593.83
Edmonton-----	118,255.68	3,332.29	—	—	—	—	—	—	121,587.97
Vancouver-----	351,390.11	261,175.00	—	13,508.79	—	—	—	—	626,073.90
Victoria-----	10,206.46	7,749.01	—	—	—	—	—	—	17,955.47
Prince Rupert-----	6,168.50	4,669.09	—	—	—	—	—	—	10,837.59
Fort William-----	541,689.07	410,507.24	—	—	—	—	—	—	952,196.31
Toronto-----	6,546.60	—	—	—	—	—	—	—	6,546.60
Chatham-----	35,557.81	—	—	—	—	—	—	—	35,557.81
Ottawa-----	—	—	—	—	—	—	—	—	—
Montreal-----	14,932.72	—	—	7,775.44	—	—	—	—	22,708.16
Baie Comeau-----	5,705.97	2,716.22	—	—	—	—	—	—	8,422.19
Totals-----	1,583,840.70	793,887.23	2,349.00	72,539.03	—	—	—	—	2,452,615.96

Table H-3—Accrued Revenue and Net Expenditure, by Points and Branches, Fiscal Year ended March 31, 1963—Concluded

	Inspection	Weighing	Appeal Tribunals	Statistics	Research Laboratory	Grain Standards Commit- tees	Adminis- tration	Executive, Salaries of Commis- sioners	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$
EXPENDITURE									
Winnipeg	699,468.23	61,490.96	11,335.78	240,014.11	398,643.01	2,664.62	117,903.92	42,246.19	1,573,766.82
Churchill	25,748.80	20,339.69	—	—	—	—	—	—	46,088.49
Keewatin	6,400.18	7,424.59	—	—	—	—	—	—	13,824.77
Saskatoon	44,391.82	33,162.25	—	—	—	—	17,453.83	—	95,007.90
Moose Jaw	15,556.71	18,436.71	—	—	—	—	15,801.17	—	33,993.42
Regina	—	—	—	—	—	—	—	—	15,801.17
Medicine Hat	—	12,615.33	—	—	—	—	—	—	12,615.33
Lethbridge	10,339.96	5,166.00	—	—	—	—	—	—	15,505.96
Calgary	128,799.13	58,619.20	5,797.48	—	—	—	—	—	198,215.81
Edmonton	152,582.62	17,083.32	—	—	—	—	19,515.49	—	189,181.43
Vancouver	336,551.43	245,495.53	—	17,785.55	—	—	—	—	599,832.51
Victoria	19,431.80	9,799.74	—	—	—	—	—	—	29,231.54
Prince Rupert	9,993.64	12,107.41	—	—	—	—	—	—	22,101.05
Fort William	952,937.34	743,678.71	—	—	—	—	—	—	1,696,616.05
Toronto	13,186.69	—	—	—	—	—	—	—	13,186.69
Chatham	53,388.25	—	—	—	—	—	—	—	53,388.25
Ottawa	17,233.86	—	—	—	—	—	—	—	17,233.86
Montreal	174,756.86	12,254.46	—	22,431.27	—	—	—	—	209,442.59
Baie Comeau	18,229.28	—	—	—	—	—	—	—	18,229.28
Totals	2,678,996.60	1,257,673.90	17,133.26	280,230.93	398,643.01	2,664.62	170,674.41	42,246.19	4,848,262.92

Table H-4—Summary of Operations by Branches, Fiscal Year ended March 31, 1963

	Inspection	Weighing	Appeal Tribunals	Statistics	Research Laboratory	Grain Standards Commit- tees	Adminis- tration	Executive, Salaries of Commis- sioners	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$
REVENUE									
Fees.....	1,533,307.19	785,548.28	2,349.00	72,489.03	—	—	—	—	2,393,693.50
Overtime.....	8,088.52	8,338.95	—	—	—	—	—	—	16,427.47
Express Charges.....	4,629.50	—	—	—	—	—	—	—	4,629.50
Samples Sold.....	37,806.29	—	—	—	—	—	—	—	37,806.29
Refund of Previous Year's Expenditure.....	9.20	—	—	5.00	—	—	—	—	14.20
Miscellaneous Revenue.....	—	—	—	45.00	—	—	—	—	45.00
Totals.....	1,583,840.70	793,887.23	2,349.00	72,539.03	—	—	—	—	2,452,615.96
EXPENDITURE									
Salaries.....	2,379,789.05	1,208,873.18	13,608.38	213,668.75	277,738.53	—	121,680.60	42,246.19	4,257,604.68
Rent.....	94,988.74	12,083.95	658.00	21,991.68	39,850.15	—	18,187.24	—	187,759.76
Travel.....	64,425.59	28,458.42	999.79	1,841.43	6,053.89	1,614.62	19,054.57	—	122,448.31
General Expenses.....	125,384.79	5,332.61	1,865.27	11,011.24	67,652.63	1,050.00	10,909.10	—	222,905.64
Printing and Stationery.....	14,408.43	2,925.74	1.82	31,717.83	7,347.81	—	1,142.90	—	57,544.53
Totals.....	2,678,996.60	1,257,673.90	17,133.26	280,230.93	398,643.01	2,664.62	170,674.41	42,246.19	4,848,262.92

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CANADA

Grain Commissioners Board

ANNUAL REPORT.

(OF THE)

(Board of Grain Commissioners)
(for Canada)

FOR THE YEAR

1964

(DEPARTMENT OF AGRICULTURE
OTTAWA, CANADA)

Minister:

Hon. Harry W. Hays, M.P.

(Deputy Minister:

S. C. Barry)

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1965

Price: 50 cents



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Winnipeg, Manitoba,
January 27, 1965.

The Honourable Harry Hays, M.P.,
Minister of Agriculture,
Ottawa, Canada.

Sir, — We beg to submit herewith Report of the Board of Grain Commissioners for Canada for the year 1964 in compliance with Section 23 of the Canada Grain Act.

This report records information and statistics relating to grain handlings for the crop year August 1, 1963 to July 31, 1964, expenditures and revenue for the fiscal year April 1, 1963 to March 31, 1964, and summarizes the major activities of the Board for the 1964 calendar year.

Grain Supplies and Disposition — Crop Year 1963-64

The 1963-64 crop season will go down in Canadian grain history alongside 1928-29 and 1952-53 as a year of record movement. Supplied by a substantial inward carryover and an all-time record wheat crop, the Canadian elevator system was able to meet the requirements of better than average regular customer exports and an unprecedented single customer sale to the U.S.S.R.

An estimated 735 million bushels of the five principal grains, wheat, oats, barley, rye and flaxseed, were carried over into the 1963-64 season, approximately 25% of this in farmers' bins and 75% either in licensed elevators or in recognized carriers in transit between licensed positions. The 1963 crop represented an all-time record for Canadian wheat production with a final estimate set at 723.4 million bushels; the production of the other four grains, while not of record levels, was still substantial — oats 453.1, barley 220.7, rye 12.8 and flaxseed 21.1 million bushels.

This production plus the inward carry-over gave us a supply total of approximately 2,200 million bushels of grain to meet our requirements for domestic needs — feed, seed, human food and other industrial users — and to meet the demands of a record export trade.

The Board took all possible steps to facilitate this expanded movement; inspectors and weighmen were moved quickly in October and November of 1963 to bolster staff at critical points; new procedures were instituted and old procedures streamlined to increase our capacity to weigh and inspect grain at these vital points. Over the crop year our staff inspected and weighed into terminals and other points in the Western Division, over 390,000 carlots of grain — 122,000 more than in the previous crop year. They supervised the loading of 925 lake grain cargoes — 35 more than in the previous year and, at the Lakehead, Churchill and West Coast, inspected and weighed grain into 1,720 ocean boats for overseas destinations. This was 400 more ocean cargoes than in 1962-63. Our laboratory kept pace with research, protein analysis, baking tests and all other related problems of this tremendously expanded movement. The Statistics Division handled a substantially larger volume of warehouse receipts and other documents, met the demands of a tremendously increased number of day-to-day enquiries stimulated by these extended handlings and kept the Trade advised on a day-to-day basis as to the movement of Canadian grain. In all phases of our operations, the Board recognized their responsibility to co-operate with the grain trade and other agencies in meeting the requirements of this expanded trade and the challenge of these record export sales.

Marketings

The volume of the five principal Canadian grains delivered to the licensed elevator system during the crop year under review — 745.4 million bushels — was second only to the peak movement (851.2 millions) recorded in 1952-53. Record wheat marketings provided the impetus for the vastly expanded 1963-64 deliveries which included 576.5 million bushels of wheat, 50.1 millions of oats, 92.2 millions of barley, 9.0 millions of rye and 17.6 millions of flaxseed. Primary marketings at Western country elevators amounted to 730.1 million bushels, with receipts at interior terminals and mills totalling 5.4 millions and platform loadings an additional .1 millions. Farmers' marketings of Eastern grown grain direct to the licensed system of 9.7 million bushels, principally wheat, were the highest on record.

Country Elevator Shipments

Country elevator licensees report that the 1963-64 carlot movement of wheat, oats, barley, rye and flaxseed combined reached an all-time high of 772.9 million bushels — 27.0 millions above the previous record volume. Shipments to all sectors reflected absolute increases over 1962-63 figures although the relative distribution of grain indicates little change from the previous crop year. The rail movement from the prairies to the Canadian Lakehead — 444.2 million bushels, all grains — comprised 57.5% of country elevator shipments. Carlots to the Pacific Coast totalled 221.6 million bushels and represented 28.7% of the country elevator boxcar traffic. Western mills and manufacturing plants handled a further 8.5% (65.9 millions) of the country shipments while the rail movement to Churchill (23.3 millions) represented 3.0% of the 1963-64 total. Wheat at 602.8 million bushels was far in excess of any previous loadings while the amounts of oats (50.9 millions), barley (95.4 millions), rye (7.2 millions) and flaxseed (16.6 millions) indicate little change from the past few years.

Terminal Handlings

Fort William-Port Arthur elevator handlings reflected the high volume of grain forwarded from the prairies to terminal positions during the 1963-64 crop year. Car unloads at the Lakehead of 441.4 million bushels — 148 millions above 1962-63 — represented one of the heaviest movements on record while vessel shipments of 442.6 million bushels — 161 millions over 1962-63 — were exceeded only by the peak 1944-45 flow (490.2 millions). The direct overseas shipment of 17.5 million bushels of Canadian grain was 3 millions below the 1962-63 record export movement. Vessel shipments to United States lake ports of 10.3 million bushels, principally barley, were more than twice the previous crop year's figure.

Overseas clearances of the five principal Canadian grains ex Pacific Coast terminals of 220.7 million bushels were 40 millions above the previous record crop year shipments witnessed in 1961-62. The individual grain breakdown of this year's total (with 1962-63 figures in brackets) includes: wheat 171.8 (139.5), oats 12.8 (9.0), barley 28.1 (5.2), rye 1.6 (1.6) and flaxseed 6.4 (6.2) million bushels. Rapeseed exports amounted to an additional 5.1 million bushels.

The outflow of Canadian wheat from the port of Churchill during 1963-64 — 21.7 million bushels — indicates little change from the previous crop year total of 21.8 millions.

Eastern Elevator Handlings

The overseas export movement of the five principal Canadian grains ex licensed Eastern elevators amounted to a record 343.1 million bushels during

the 1963-64 crop year. This figure indicates an increase of 64.0 million bushels over the previous high export movement experienced in 1952-53. Wheat shipments of 334.6 million bushels were the principal component of this year's loadings. All ports shared in the expanded flow recording vastly increased shipments compared with 1962-63 figures: Montreal 133.5 (53.5), Sorel 34.4 (19.3), Three Rivers 33.1 (13.3), Quebec 24.9 (8.3), Baie Comeau 61.9 (26.2), Saint John and West Saint John 32.2 (10.5), and Halifax 22.3 (9.3) million bushels.

The volume of grain received at St. Lawrence ports on a transfer basis from Bay and Lake elevators — 32.2 million bushels — continued to decline in relative importance during the crop year under review. Whereas in pre-Seaway days this flow accounted for approximately 90% of St. Lawrence unloads, during 1963-64 the figure was reduced to 10%. Receipts of 54.8 million bushels of Canadian grain at Maritime ports were again primarily moved on a rail basis ex Bay Ports but included 6.4 millions shipped by vessel direct from the Canadian Lakehead.

Expanded handlings of United States grains at Eastern elevators were also evident during the 1963-64 crop year as licensees reported total receipts of 126.7 million bushels, overseas clearances of 108.6 millions and 16.2 millions moved into Canadian domestic channels. United States corn was again the major component of this year's handlings with receipts of 60.3 million bushels, exports of 46.4 million bushels and some 13.7 millions consumed within Canada.

The volume of Canadian grain moving via licensed Eastern elevators into domestic channels for processing or feed — 127.7 million bushels — represents an increase of 30 millions over the 1962-63 flow. Included in this year's total were 60.9 million bushels of wheat, 32.6 millions of oats, 29.8 millions of barley, 2.5 millions of rye and 1.7 millions of flaxseed.

Exports

Canada exported a record of 614.9 million bushels of wheat, oats, barley, rye and flaxseed combined via the licensed elevator system during the crop year ended July 31, 1964. This year's movement represents an increase of some 90 millions above the previous high of 525.8 million bushels recorded in 1952-53 and is more than double the long term 30-year average figure of 290.3 million bushels. The bulk wheat total of 536.7 million bushels is far above the old record of 354.4 millions set in 1928-29 but exports of the other principal grains, while substantial in comparison to recent years, do not compare with existing records as indicated by the following figures: oats 17.5 millions (77.6 millions in 1944-45), barley 41.5 millions (118.9 millions in 1952-53), rye 5.5 millions (16.8 millions in 1953-54) and flaxseed 13.6 millions (21.6 millions in 1956-57). Wheat flour exports totalling 54.4 million bushels are the highest in the past ten years but below the record 1946-47 figure of 79.5 millions.

As a result of the record 1963-64 Canadian wheat exports, Canada's share of the world trade in wheat and wheat flour increased from 22% last year to 29% this year. This country also recorded an increased share in the world export movement of the coarse grains with some 15% of the total trade contrasted with last year's 11.4%.

Domestic Usage

Canadian farmers and domestic processors absorbed a total of 726.0 million bushels of the five principal grains for feed, seed, human food and industrial use during 1963-64. This represents an increase of approximately 50 million bushels over the 1962-63 disappearance figure and is primarily

attributable to the higher levels of "on farm" consumption of wheat and barley. The domestic usage totals for the individual grains have been estimated as follows, with 1962-63 totals in brackets: wheat 160.1 (141.7), oats 406.4 (401.8), barley 150.1 (123.9), rye 4.5 (4.4) and flaxseed 4.9 (4.8) million bushels.

Carryover

A slight increase was evident in the stocks of the five principal Canadian grains held either on farms or in licensed storage — 770.7 million bushels — at the close of business July 31, 1964. An estimated 40% of the 1963-64 carryover figure was held in on farm storage, indicating a change in the pattern evident during the past few years when farm bins contained approximately 25% of the year end stocks. All grains, with the exception of wheat, reflect increases over comparable 1963 totals as indicated by the following figures: wheat 459.4 (487.2), oats 179.4 (150.3), barley 118.3 (89.2), rye 7.1 (4.2) and flaxseed 6.5 (4.0) million bushels.

Licensing and Bonding

The total licensed storage capacity at August 1, 1964 was 669,224,410 bushels — all in licensed elevators. This represented an increase of 8.8 million bushels in capacity since August 1, 1963. The number of licences in effect for country, terminal, mill and Eastern elevators showed a small decrease for the crop year, totalling 5,276 at the beginning of the crop year 1964-65 as compared with 5,288 a year ago. In addition to these licensed elevators there were licensed at August 1, 1964, 14 Track Buyers, 16 Commission Merchants and 3 Grain Dealers. The only major change in the storage pattern occurred in the public country elevator system which increased 8.2 millions to a total of 376.4 million bushels. Eastern elevator capacity increased .7 millions to 120.3 million bushels, while terminal, mill and private country elevator storage capacity remained relatively unchanged from the capacities at August 1, 1963.

Assistant Commissioners

Through its four Assistant Commissioners, the Board kept in close touch with the operation of licensed country elevators in the Western Division. During the year 1964, the Assistant Commissioners inspected 657 elevators in Manitoba, 763 in Northern Saskatchewan, 607 in Southern Saskatchewan, and 497 in Alberta, a total of 2,524. This inspection included checks on scales, sieves, moisture meters and certain other equipment; deductions for shrinkage and Prairie Farm Assistance Act Levy, and posting of current Board Regulations applying to country elevators.

Complaints originating from country points totalled 16 as compared with 9 in the previous year.

Disposition of complaints investigated, including one case carried over from 1963, was as follows:

	Manitoba	Saskatchewan	Alberta	Total
No grounds for complaint	2	1	—	3
Settlement effected	3	2	4	9
Outside jurisdiction of Board	—	4	1	5
Totals	5	7	5	17

The Assistant Commissioners received and handled numerous inquiries on various matters related to country elevator operation.

Prosecutions

During 1964, on the request of the Board, the R.C.M.P. filed charges before the Courts in connection with three cases of alleged breaches of the Canada Grain Act and Regulations. Convictions were obtained in all three instances.

Shortages and Overseas, Country Elevators

With all facilities extended to the maximum to accommodate the tremendous volume of grain moving through country elevators, it was neither feasible nor possible for the companies to carry out any extended program of weigh-ups. As a result, audits were confined to those instances in which either stock levels were low enough to permit a rapid weigh-up or shipping requirements had been temporarily shifted to other locations. A total of 1448 country elevator weigh-ups were reported during the 1963-64 crop year. The results of these weigh-ups conform largely to the pattern of previous years.

Elevators Reporting	1963-64	1962-63
Shortages	357	684
Neither Overages nor Shortages	5	8
Overages of less than .25%	695	1,203
Overages of .25% to .50%	319	516
Overages over .50%	72	147
Total elevators weighed over	1,448	2,558

The Board summoned 68 agents of country elevator licensees to appear at hearings held at Winnipeg, Regina, Saskatoon, Calgary and Edmonton, in connection with excessively high overages. At these sessions, members of the Board interviewed agents and examined records concerning their operations in the presence of senior officials of the companies concerned.

Regulations

The principal amendments made to the Canada Grain Regulations during 1964 were as follows:

- (1) Revision of definition of No. 2 Feed Screenings, effective August 1, 1964.
- (2) Reduction of minimum moisture content for Tough Durum Wheat to 14.6%, to correspond with the minimum specified for other classes of wheat, effective August 1, 1964.
- (3) Increase of $\frac{1}{8}$ cent per bushel in maximum elevation charges at terminal elevators, to become effective January 1, 1965.
- (4) Increase of \$1.25 per 1,000 bushels in maximum elevation charge at eastern elevators located at Bay Ports, effective April 15, 1965.
- (5) Provision of maximum charge of \$5.00 per 1,000 bushels for shovelling grain on vessels unloaded at eastern elevators located at transfer ports and St. Lawrence ports, effective April 15, 1965.

The Board amended several additional items in the Regulations to clarify them or to bring them into line with changes in procedure which took place during the year.

Committees on Grain Standards

The Board constituted Committees on Western and Eastern Grain Standards for the Crop Year 1964-65 as provided in Section 25 of the Canada Grain Act. Personnel of these Committees is listed in Appendix A.

A meeting of the Western Committee was held at Winnipeg on October 22, 1964. The members received numerous reports relating to quality of crops grown in the 1964 season, and to various other matters in connection with grading of grain, and also selected and settled standard samples and standard export samples for various grades of Western grain.

The Eastern Committee met in Toronto on August 19, 1964, and in Montreal on October 28, 1964, and established standard samples for grades of grain grown in Eastern Canada.

Both groups authorized continued use of previously selected standard samples in instances where suitable recent samples for established grades were not available.

Inspection of Grain — Report on 1964 Crops

Western Canada experienced an exceptionally dry post-harvest season in 1963, which depleted surface soil moisture, but subsoil moisture conditions generally were quite good. Conditions during sowing, growing and harvesting seasons were extremely variable from one area to another; these have caused wide ranges of quality and grades.

In the Peace River district of Alberta and over most of Saskatchewan, seeding was delayed by spring rains and there was drought and soil drifting in some southern districts. In northern Manitoba, it was too dry in the early growing season, resulting in poor germination of late-seeded crops, and there was drought damage in the east-central and northeastern sections of Alberta. Early frost over a wide area of Saskatchewan did some moderately light damage; later, severe frosts did extensive damage over a large area in all three provinces. Wet weather delayed harvesting seriously in northern areas, and much grain remained standing in fields until late October, and even into November.

Conditions in Manitoba had improved rapidly from mid-season, with timely rains where needed and hot dry weather in the wet or flooded areas of the province, to yield an all-time record estimated wheat crop in excess of 80 million bushels.

Frost damage is the predominant factor in our wheat grades, with some severe mildew damage and second-growth green. Ergot appears near the average of the past two years in spring wheats, and somewhat lower in new crop durumms delivered. The percentage of the crop harvested in tough or damp condition is substantially higher than the long-term average.

Our barley crop is far below normal in quality. The areas which normally produce our highest quality malting barley suffered most seriously from wet weather delays to harvesting, and this resulted in a relatively small percentage of 1964 production being eligible for malting grades. There is evidence of a serious shortage of good quality malting barley.

Only early-harvested oats are high in quality; test weight per bushel remains fairly high, but the majority of production suffered from extensive mildewing in fields as well as from weather-stain and some frost.

The quality of the rye crop is above average, having better colour generally, and containing somewhat less ergot than usual.

The quality of our oil seeds is extremely variable. Flaxseed suffered some damage from early frost, but quality is generally good, with the bulk of deliveries grading No. 1 C.W. There was extensive, heavy frost damage

to rapeseed, with production estimated at close to double the average of recent years. Heavy weed growth has accentuated cleaning problems for handlers, but the damage from frost alone is so severe that exporters may have difficulty in satisfying demand for high grade seed. Large quantities of low quality rapeseed have caused a disposal problem for producers and a handling problem for elevator operators.

The production of domestic mustard seed was reduced considerably this year, and quality is generally lower than in 1963, with frost damage the main degrading factor. There is a definite shortage of high quality seed.

The new variety of field peas, "Century", has this year largely taken over production of this crop. Fairly good yields and average quality were realized by most growers. Cooking quality is excellent; the main factors affecting grades are weather damage, immaturity and adhered soil.

In the light of precipitation in the fall and soil moisture reserves, conditions look good for spring operations through most of Saskatchewan and Alberta. Indicated soil moisture reserve is somewhat below normal over much of Manitoba.

Research Laboratory

The Laboratory maintained its annual studies of the quality of western cereal grains. Information on the quality of the 1964 grain crop and on the quality of cereal grains marketed in the 1963-64 crop year was compiled and presented to the Western Committee on Grain Standards at its October meeting. These data were also published as maps, new-crop bulletins, and quarterly cargo bulletins.

Services provided the Grain Inspection Branch included quality control for the commercial drying of tough and damp grain at terminal elevators, preparation of calibration curves for the determination of moisture in a variety of cereals using the Model 919 meter, supervision of moisture testing equipment in Inspection offices, and quality tests on many individual parcels of domestic and export grains. A variety of services was provided the Canadian Wheat Board, government agencies in Canada and elsewhere, and grain and milling companies. Quality tests on new varieties of several cereal grains were again carried out. With the co-operation of the Department of Agriculture, a worldwide collaborative study of new spring wheat varieties was organized.

Among the basic and applied research projects carried on during the year were the following: Further studies of the role of sulfhydryl groups and the disulfide interchange reaction in flour dough, studies of the improving action of ascorbic acid in dough, continuous dough processing with a laboratory mixer, studies of the effect of starch damage on dough properties and baking performance, development of a new short method for determining lipoxidase activity in durum wheat and semolina, further studies of the formation of an undesirable brown color in macaroni, studies of chill haze protein in barley and malt, and investigations of factors involved in the development of enzymes in malting barley. Results of laboratory research were published in a total of fourteen papers appearing during the year in appropriate scientific and technical journals.

The Laboratory and its professional and senior technical staff maintained active contacts with many scientific and technical societies such as the American Association of Cereal Chemists, the International Association for Cereal Chemistry, Chemical Institute of Canada, and others. Dr. Irvine attended meetings of the International Association for Cereal Chemistry in Vienna and visited a number of laboratories in Europe, Scandinavia, and the United Kingdom. In the fall, Dr. Irvine visited mill and bakery laboratories

in Hong Kong and Japan. Visitors from many countries toured the Laboratory during the year. Appendix F of this report is a short summary of the work of the Laboratory for 1964. More detailed information will appear in the Laboratory's Annual Report for 1964.

Weighing of Grain

The staff of the Board's Weighing Branch provided usual weighing services at licensed elevators and investigated complaints relating to reports of excessive outturn shortages on carlot and cargo shipments. The Board's scale inspectors carried out periodic tests and inspections of scales at licensed terminal and eastern elevators, and made special inspections when such were considered necessary.

In December, the Chief Weighmaster visited several large ports in the United Kingdom and Western Europe to gain first-hand knowledge of facilities for unloading and weighing grain.

Further detailed information in regard to the work of this branch is given in Appendix E.

Weighover of Stocks, Terminal and Eastern Elevators

In accordance with the provisions of Sections 139 and 140 of the Canada Grain Act, 15 terminal and 20 eastern elevators were weighed over during the 1963-64 crop year by members of the Board's Weighing and Inspection staffs.

Deferments into the following crop year were made at 11 terminal elevators at the Lakehead, 14 terminal elevators at other points, and at 11 eastern elevators. The Board found it necessary to grant these deferments to avoid delaying the handling and loading of grain required to meet export orders. However, it was possible to carry out 8 of these deferred weighovers before the end of December, 1964.

Tables C-12 to C-14 of Appendix C contain the results of weighovers carried out in the 1963-64 crop year.

Entomological Investigations

To protect Canadian grain in storage from losses by insects and other grain pests, a systematic program of inspection of terminal elevator premises and grain stocks was continued in 1964. Most of the terminal elevators were visited at least once during the season. The elevators in the Bay Port and St. Lawrence River area were checked on two occasions. One trip was made to the Pacific Coast. Discussions were held on each visit with the management on the conditions found. When necessary, instructions were issued on control measures.

The terminal elevators were all reasonably free from insect pests. Only a small amount of additional insect control was necessary at the time of examination.

In Eastern Canada the season of 1964 was relatively free from insect infestation largely because of the low summer temperatures. As in 1963, on the Pacific Coast in spite of above normal temperatures, the terminals were fairly free from stored product pests during the summer months. Later in the season, there was a tendency on the part of some operators to slacken off in the control work. This necessitated more control measures at the time of inspection.

Close contact has been maintained with the various grain inspection offices of the Board. These have been visited while checking the various terminal elevators. Insect control has been discussed with senior staff members on these occasions.

An examination was made of the Canadian Government Elevators at Saskatoon, and Moose Jaw, Sask., at Edmonton, Calgary and Lethbridge, Alta. and Prince Rupert, B.C. The grain stocks at Saskatoon and Moose Jaw were very small at the time of inspection.

Large representative samples were drawn from the bottom of all of the storage bins containing grain and checked for grain pests. All of these elevators were essentially free from insect infestation.

Considerable time was devoted to the checking of incoming railroad cars of grain on arrival at the terminals. Studies were carried out both at the Lakehead and in Vancouver. The investigation was aimed at improvement in the methods used to detect infestation in incoming cars. Throughout these studies, Dr. Gray was ably assisted by members of the Grain Inspection staff. A report on the work is now being prepared.

As in the past, an analysis has been made of the carlots of grain found to be infested with grain insects at the time of unload at terminal elevators. This season the total number of cars showing infestation was 32 as opposed to 158 in 1963 and 203 in 1961. The reduction this season is due in part to the heavy shipments made during the past crop year. Nineteen cases occurred in wheat and 13 in coarse grains. There were nineteen occurrences in grain from Saskatchewan, 9 from Manitoba and 4 from Alberta.

Some time was spent in the revision of the Stored Grain Pest supplement to the Canadian Grain Inspector's Manual. It deals with the description, life-history, habits, and control of the various insects found in stored grain in Canada.

Close liaison has been continued with a number of organizations by the Board's Entomologist, Dr. H. E. Gray, with the Canadian Wheat Board on matters related to grain storage and on grain-infesting insects, with the Plant Protection Division on stored product pests in general and especially those in stored grain and in export flour, and with the grain and milling trade in connection with insect problems in their fields.

Terminal and Eastern Complaints

During 1964, the Board directed the investigation of 31 complaints relating to reports of excessive outturn shortages on shipments to Eastern Canadian points. With two exceptions, these shipments originated at Fort William and Port Arthur.

The complaints were disposed of as follows:

No cause of reported discrepancy found	30
Complaint withdrawn	1
Total	31

Complaints on Export Shipments

A total of 56 complaints relating to shipments to Overseas destinations were dealt with by the Board and its officials in 1964. Of this number, 29 concerned outturn weights reported from Overseas, and 27 referred to some aspect of the quality of grain cargoes.

Disposition was as follows:

	Quality	Weight
No cause of reported discrepancy found	—	26
No grounds for complaint	27	—
Settlement effected	—	2
Complaint withdrawn	—	1
Totals	27	29

Statistics

Statistics relating to Canadian grain movement collected and compiled by the Board's Statistics Division are presented in Appendix C of this report.

Information Program

The Board's Assistant Commissioners arranged for visits of the Mobile Grain Grading Exhibit to 13 Agricultural Fairs held at points in the three Prairie Provinces, and a smaller stationary exhibit was remodelled and displayed at two of the annual Seed Fairs.

All exhibits were in the charge of qualified grain inspectors from the Board's Grain Inspection Branch, and in most cases, a technician from the Research Laboratory staff was also in attendance. A Board grain inspector attended eight Barley Improvement Field Days held at various points in Manitoba and Saskatchewan and displayed samples of the different barley grades, together with posters relating to proper handling of malting barley.

The Board's offices were visited by a number of officials of the Foreign Trade Service of the Department of Trade and Commerce, and by other individuals and groups from Overseas and the United States who wished to discuss matters related to the grain trade and obtain first-hand information about the functions and services of the Board. Other visitors during the year included groups of country elevator agents and agriculture students.

In addition to discussions with members and officials of the Board, arrangements were made for visitors to tour the Inspection Branch, the Research Laboratory and other divisions as desired; also to view the colour motion picture film "Grain Handling in Canada".

Members of the Board and senior officials again accepted a number of invitations to address annual meetings of producer organizations and to discuss topics of current interest related to the Board's work.

During the month of May, the Chief Commissioner, accompanied by Commissioner Loptson and the Secretary of the Board, went Overseas to confer with officials of grain importing and processing firms in the United Kingdom and Europe, including the U.S.S.R., and to obtain first-hand information about grain handling methods and facilities in that area.

Canadian Government Elevators

Receipts of grain during the crop year 1963-64 at the Canadian Government Elevators operated by the Board at Moose Jaw, Saskatoon, Calgary, Edmonton, Lethbridge and Prince Rupert, were 17.2 million bushels, compared with 7.1 millions in the previous crop year. Total shipments were 17.9 millions, an increase of 7.6 million bushels over the corresponding figure for 1962-63.

In the fiscal year 1963-64, expenditures exceeded revenues by the amount of \$304,018.

Lake Freight Rates

On March 10, 1959, under the provisions of Section 5 of the Inland Water Freight Rates Act, the Board issued Order No. 21 which revoked Order No. 20 of September 28, 1954. This had the effect of cancelling maximum freight rates established by the Board in Order No. 20 for the carriage of grain from Fort William or Port Arthur to other specified ports in Eastern Canada.

The average rates charged during the 1964 season of navigation are given in Table C-11 of Appendix C.

Prairie Farm Assistance Act

Under the provisions of Section 11 of the Prairie Farm Assistance Act, the Board continued to collect the one per cent levy on grain purchased by licensees under the Canada Grain Act. During the crop year 1963-64, the amount collected was \$10,736,292.00, an increase of \$2,121,868.00 over collections recorded for the previous crop year. Collections by the Board since the inception of the Act (August 1, 1939) to July 31, 1964, total \$153,443,423.00.

Organization and Personnel

Mr. V. Martens, who directed the Administration, Crop Surveys and Ancillary Services Unit of the Grain Research Laboratory, was appointed Assistant Secretary to the Board on October 1, 1964.

It is expected that early in the New Year, Mr. M. J. Conacher, Chief Grain Inspector for the Board, will be undertaking new duties as Special Advisor to the Board.

As at December 31, 1964, the Board's staff totalled 840 as compared with 876 at the end of the previous year. The staff of the Canadian Government Elevators numbered 216, an increase of 7 over the previous year.

A chart of the Board's organization, including details of staff location, follows this report.

Expenditure and Revenue

Total expenditure and accrued revenue of the Board, exclusive of the Canadian Government Elevators, for the fiscal year 1963-64 compared with 1962-63 was as follows:

	1963-64	1962-63
Expenditure	\$5,134,801.66	\$4,848,262.92
Revenue	3,128,748.72	2,452,615.96

Expenditure for the nine months of the 1964-65 fiscal year to December 31, 1964, including statutory salaries of the Commissioners, totalled \$3,824,495.

Cash revenue for the same nine-month period amounted to \$2,952,394 as compared with \$1,952,229 in the previous year.

Attached hereto is a series of Appendices which outline in greater detail the work of the Board's Divisions.

Respectfully submitted,

F. Hamilton,
Chief Commissioner

S. Loftson,
Commissioner

A. V. Svoboda,
Commissioner

W. J. MacLeod,
Secretary

<p>Chief Commissioner - F. F. Hamilton</p> <p>Commissioner - S. Loptson</p> <p>Commissioner - A. V. Svoboda</p> <p>Secretary - W. J. MacLeod</p>	<p>Assist. Secretary - V. Martens 6</p> <p>Personnel Admin. - G. E. Rogers 6</p>	<p>Winnipeg - W. S. Fraser 2</p> <p>Regina - J. H. Davidson 2</p> <p>Saskatoon - R. H. Taylor 2</p> <p>Edmonton - A. Randfleisch 2</p>	<p>INSPECTION</p> <p>Chief Inspector</p> <p>M. J. Conacher</p>	<p>WEIGHING</p> <p>Chief Weighman</p> <p>H. C. Britton</p>	<p>STATISTICS</p> <p>Chief Statistician</p> <p>E. E. Baxter</p>	<p>RESEARCH LAB.</p> <p>Chief Chemist</p> <p>Dr. G. N. Irvine</p>	<p>GRAIN APPEAL</p> <p>TRIBUNAL</p> <p>Chairman, J. L. A. Doray</p>	<p>GOV'T ELEVATORS</p> <p>General Manager</p> <p>A. H. Wilson</p>
<p>Staff</p> <p>Winnipeg 80</p> <p>Montreal 40</p> <p>Ottawa 2</p> <p>Chatham 8</p> <p>Toronto 2</p> <p>Fort William 170</p> <p>Keewatin 1</p> <p>Saskatoon 9</p> <p>Moose Jaw 3</p> <p>Lethbridge 2</p> <p>Calgary 16</p> <p>Edmonton 19</p> <p>Vancouver 70</p> <p>Victoria 4</p> <p>Prince Rupert 5</p> <p>Baie Comeau 2</p>	<p>Staff</p> <p>Winnipeg 12</p> <p>Montreal 2</p> <p>Fort William 150</p> <p>Keewatin 1</p> <p>Saskatoon 7</p> <p>Moose Jaw 4</p> <p>Medicine Hat 2</p> <p>Lethbridge 1</p> <p>Calgary 12</p> <p>Edmonton 4</p> <p>Vancouver 45</p> <p>Victoria 2</p> <p>Prince Rupert 4</p>	<p>Staff</p> <p>Winnipeg 36</p> <p>Montreal 5</p> <p>Fort William 21</p> <p>Vancouver 16</p>	<p>Staff</p> <p>Winnipeg 58</p>	<p>Staff</p> <p>Winnipeg 1</p>	<p>Staff</p> <p>Winnipeg 11</p> <p>Saskatoon 28</p> <p>Moose Jaw 27</p> <p>Lethbridge 19</p> <p>Calgary 32</p> <p>Edmonton 45</p> <p>Prince Rupert 54</p>			

APPENDIX A

Committee on Western Grain Standards as at December 31, 1964

F. F. Hamilton, Chief Commissioner, Board of Grain Commissioners.
S. Lopston, Commissioner, Board of Grain Commissioners.
A. V. Svoboda, Commissioner, Board of Grain Commissioners.
M. J. Conacher, Chief Grain Inspector, Board of Grain Commissioners.
Dr. G. N. Irvine, Chief Chemist, Grain Research Laboratory.
J. L. A. Doray, Chairman, Grain Appeal Tribunal, Winnipeg.
Dr. J. A. Anderson, Dominion Cerealists.
L. A. McCorquodale, representing the millers of wheat flour.

H. Anderson
R. J. Graham
E. F. Seney
K. Anderson

} Representing grain growers in Alberta.

J. H. Harrison
A. P. Gleave
J. Wellbelove
L. L. Gray
N. W. Strelioff

} Representing grain growers in Saskatchewan.

W. J. Parker
P. A. McPhail
Ray Mitchell

} Representing grain growers in Manitoba.

G. Constable, representing grain growers in British Columbia.
L. Bell, representing Plant Products Division, Department of Agriculture.

Committee on Eastern Grain Standards as at December 31, 1964

F. F. Hamilton, Chief Commissioner, Board of Grain Commissioners.
S. Lopston, Commissioner, Board of Grain Commissioners.
A. V. Svoboda, Commissioner, Board of Grain Commissioners.
M. J. Conacher, Chief Grain Inspector, Board of Grain Commissioners.

W. G. Thompson, representing Montreal Board of Trade.
C. F. Bowker, representing Toronto Board of Trade.
C. Gordon McAuley, representing exporters of grain.

F. H. Dunsford
C. L. Rogers

} Representing millers of wheat in
the Eastern Division.

J. R. Heaney
F. Cryderman

} Representing grain growers in Ontario.

G. C. Nichols, representing growers of corn.
P. Blouin, Additional.
A. Bowman, Additional.

A P P E N D I X B

Grain Appeal Tribunals

Winnipeg

J. L. A. Doray (Chairman)
J. E. G. Hasell
J. F. Lazenby
Wm. E. McLeod
G. I. Rocan
E. A. Sangster
J. Weerstra
C. E. Rippin
G. A. Turner
N. Kawka (Secretary)

Toronto

A. D. Clarke
J. Elder
A. C. Gillespie
J. R. Heaney
J. Jervis
S. M. Lockington
A. L. Walker
D. C. Kay, Jr. (Secretary)

Montreal

G. T. Killeen (Chairman)
P. Blouin
R. Strauss

Miss C. Box (Secretary)

For information on Appeals of Carlot Inspections refer to Appendix D, Table D-6.

APPENDIX C

Statistics Division

E. E. BAXTER, *Chief Statistician*

(A) STATISTICS

The Canada Grain Act, in Section 15 (Subsection 16), empowers the Board to require from all Licensees those records and reports of stocks and handlings deemed necessary for effective supervision and control. From these returns the Division compiles and publishes basic statistics relating to the storage and movement of grain within the Canadian elevator system. It prepares audit statements of the operations of all terminal and eastern elevators, verifies the insurance carried on grain stocks and handles the record details relating to the amounts collected as the 1% levy under the Prairie Farm Assistance Act. It supplies for review by the Board a detailed analysis of all grain handlings and co-operates with other Board offices in the maintenance of detailed records of principal operations.

(B) LICENSING

The Canada Grain Act establishes the terms under which any elevator shall be licensed by the Board for the receipt or discharge of any western grain. The Act also specifies the conditions by which grain dealers, track buyers or grain commission merchants must be licensed in order to engage in contracts dealing with western grain by grade name. Such elevator and dealer's licences are issued by the Board through the licensing section of the Statistics Division. This office also supervises the implementation of Section 79-3 by which all such licensees must be secured by bond or otherwise for the performance of all obligations imposed upon them by the Act.

(C) REGISTRATION

Section 127 of the Canada Grain Act requires the operators or managers of public terminal, semi-public terminal and eastern elevators to issue warehouse receipts or transfer receipts for all grain taken into store. Sections 36 and 37 of the Canada Grain Regulations, made by the Board under the provisions of Section 15 (22) of the Canada Grain Act, require that all such warehouse receipts or transfer receipts be registered with the Board as to grade and quantity at the time of issue, and that these warehouse receipts or transfer receipts be surrendered to the Board for registration for cancellation when the grain which they represent has been shipped out.

Introductory Comment

The functions set out above are administered through the Division's central office in Winnipeg and sub offices in Montreal and Vancouver. The operations of the Vancouver office also include the records and documents function required by the offices of the Inspection and Weighing Divisions of the Board at that point. The Division assumed similar responsibilities of a service bureau nature at the Board's Fort William offices effective April 1, 1964. At that time the clerical offices of the Inspection and Weighing Divisions were amalgamated and these responsibilities assigned to the Statistics Division in order to achieve certain staff and operational economies preparatory to the physical transfer of these offices to new accommodation in the Federal Building at Fort William. This step was also designed to

facilitate the introduction of new records and communications procedures currently under study. Representatives from the Management Services Unit of the Department's Administration Branch gave considerable assistance to the Division in the design and implementation of the amalgamated operations.

The Division continued to work in close co-operation with other Branches of the Board, acting as their central statistical, records and documents unit and in collaborating on related control operations. A similar co-operative arrangement was maintained with corresponding units of the Canadian Wheat Board and the Grain Divisions of the Departments of Agriculture and Trade & Commerce.

Officers of the Division collaborated with a special joint committee comprised of representatives of operating grain companies and the Canadian Wheat Board in the study and preliminary testing of new accounting techniques relative to country elevator grain transactions. This was further to the work of this committee originally designed to study all phases and interrelationships in the accounting procedures and interchange of documents within the western grain trade.

A special study was undertaken as to the feasibility of expanding the Electronic Data Processing Unit of the Division to accommodate certain records and documents operations on behalf of the Head Office of the Canadian Government Elevators. In this latter study, special assistance was again received from the Management Services Unit of the Department at Ottawa.

(A) STATISTICS

The Division continued to serve as the principal source of Canadian grain storage and handling statistics, both in the release of regular bulletins and in the preparation of special reports and studies for governmental and trade offices. Regular continuing service in both statistics and records was provided for other Divisions of the Board and special analytical studies were prepared on request for the senior officers of these Divisions and for the information of the Board.

The Division continued to work in direct co-operation as a statistical agency for the Canadian Wheat Board and as a primary source of Canadian grain statistics for the Agriculture Division of the Dominion Bureau of Statistics. The office supplied both agencies with regular and periodic reports, studies in answer to special requests, and in the case of the Bureau with the primary material for the joint publication — "The Grain Trade of Canada" and auxiliary material for other related grain publications. Basic Canadian grain handling statistics were supplied to the Secretariat of the International Wheat Council, the Commonwealth Economic Committee and the Cereal Section of the Food and Agriculture Organization of the United Nations at Rome. Particularly close liaison was maintained with the Production and Marketing Branch of the U.S. Department of Agriculture in the interchange of grain statistics and related studies.

Pursuant to the provisions of the Inland Water Freight Rates Act, shippers filed with the office copies of vessel charter confirmations covering all lake grain cargoes shipped from Fort William - Port Arthur to eastern Canadian ports. The charters covered some 979 grain cargoes carried in the Canadian coasting trade during the 1964 season from the first grain shipment on April 2nd to the final loading on December 14th. A summary statement of the average rates prevailing on these cargoes over the 1964 season appears in the tables appended to this report. The Chief Statistician worked in close co-operation with Departmental officers relative to the movement of domestic feed grains through the lake system.

Audit examinations were conducted in connection with the weighup of

1,446 country elevators. The records and statements prepared in connection with the grain audits at terminal and eastern elevators, under provisions of Sections 139 and 140 of the Canada Grain Act, are summarized in tables included in the Appendix to this report. Additional studies in both of these areas were carried out by the Division to assist the Board in its review of these audits and to guide the Inspection and Weighing Divisions in their operational control work.

The Division continued its responsibility relative to Section 102 of the Canada Grain Act through the careful scrutiny of all insurance coverage maintained on Canadian grain stocks in licensed positions. Preliminary studies were initiated relative to the possible modification of insurance and licence bond procedures as required under Section 79 (3) of the Canada Grain Act and Section 102.

The collection of the 1% levy made under provisions of Section 11 of the Prairie Farm Assistance Act and under authority delegated to this office involved 1963-64 returns totalling \$10,736,292.00. This represented an increase of \$2,121,868.00 from the level of 1962-63 collections and reflected a substantially higher volume of primary grain marketings. The Statistics Division continued to collaborate with the officers of the Prairie Farm Assistance Act Administration at Regina and the Director of Crop Insurance for the Department in dealing with problems arising out of the exemption provisions of new Crop Insurance legislation.

(B) LICENSING

As at December 1, 1963, the close of the initial licensing period of the 1963-64 crop year, 5,324 licences were in force, issued to 81 firms and individuals. Included in these were 33 licences granted to Track Buyers, Commission Merchants and Grain Dealers.

During the course of the crop year 1963-64, a total of 36 licences were cancelled, one being a private country elevator and the remaining 35 all public country elevator licences. With respect to the latter cancellations, 10 elevators were sold or dismantled, 6 elevators were moved from their original location to new shipping points, 6 elevators became annexes of existing facilities at the point, 9 were destroyed by fire and not rebuilt during the course of the crop year, one licence was surrendered when the elevator was empty of grain and not in use and one licence was cancelled because the elevator was not in fit condition for grain storage. In addition to these, two elevators on an abandoned railway line, surrendered their licenses as required by Board ruling, when empty of grain.

Three licences were placed under suspension when out-of-turn cars were requested before major repair operations were undertaken. One licence was reinstated during the course of the crop year and two were still under suspension at July 31, 1964.

As at August 1, 1964, there were 5,276 elevator licences in force, representing a total storage capacity of 669,224,410 bushels. Broken down by province this total was comprised as follows: — Manitoba 60.3, Saskatchewan 214.6, Alberta 137.6, British Columbia 27.1, Ontario 166.0, Quebec 56.4 and the Maritimes 7.2 million bushels. By class of licence the storage total was made up of 376.6 million bushels country elevator, mill elevator 12.8, semi-public terminal 151.4, private terminal 8.1 and eastern elevator 120.3 million bushels. The overall increase in storage capacity from the position at August 1, 1963 amounted to 8.8 million bushels. The public country elevator system accounted for 8.2 millions of this increase with the only other change of significance occurring in the eastern elevator section where an additional .7 million was added.

At August 1, 1964, 31 "railway abandoned" public country elevator licences were in effect, covering 31 elevators at 22 different country shipping points.

Guarantee bonds in the amount of \$32,212,585.00, executed by 15 approved surety companies, were deposited with the Board as security under Section 79 of the Canada Grain Act, to cover operations of licensees during the crop year 1963-64. Negotiable Government bonds in the amount of \$1,000.00 were held in lieu of the usual form of surety bond.

(C) REGISTRATION

A daily service was provided throughout the crop year 1963-64, for the registration and registration for cancellation of warehouse receipts, as issued by the licensees of 40 semi-public terminal elevators located in the Western Division under the provisions of Section 127 of the Canada Grain Act, at offices maintained by the Statistics Division at Winnipeg, Manitoba and Vancouver, B.C. A further office was provided in Montreal, Quebec, to record the registration, and to carry out the registration for cancellation, of all warehouse receipts and transfer receipts as issued or surrendered by licensees of 32 elevators located in the Eastern Division. An additional service was put into effect at the Winnipeg office in September, 1963 to allow local representatives of Vancouver licensees to register splits, consolidations or re-issues of warehouse receipts that had been originally registered at Vancouver to cover unloads of Canada Rapeseed into terminals located on tidewater at that point. This service was requested by the Grain Trade to facilitate the documentation required to complete sales of Rapeseed made on the new futures market as established on the Winnipeg Grain Exchange at that time.

The volume of grain documented by semi-public elevators in the Western Division, as determined by the total bushels of warehouse receipts registered or registered for cancellation, Table C-19, show increased handlings at all points, with overall increases of 211.7 million and 222.2 million bushels respectively for total handlings at all elevators in that Division over that of the previous year. Increases of 205.0 million and 216.0 million bushels respectively were also recorded for these documentations as compared to the 10-year average. Total bushels registered or registered for cancellation by all licensees of elevators in the Eastern Division show an overall increase of approximately 50% in handlings in both categories, with totals of 206.2 million and 265.8 million bushels respectively being recorded over those of the previous year and increases of 187.8 million and 238.4 million bushels respectively over those of the 10-year average.

At Winnipeg, registration reports and manifests, together with the accompanying warehouse receipts, as submitted by licensees, were compared daily to official reports of grain received and shipped and the warehouse receipts registered or registered for cancellation as required. In this connection, several control measures that were requested to be instituted by the Canadian Wheat Board were exercised throughout the year.

Totals of outstanding warehouse receipts were maintained, by elevator, grain and grade, for all semi-public terminal elevators at the Lakehead and Interior points. These records were maintained in such manner as to provide totals of handlings under several different categories as well as a daily total of outstanding warehouse receipts, by grade, and these totals were used for comparison to actual stocks found to be in store in these elevators at the time of the official audit, as carried out by Board officials, and any differences were required to be adjusted immediately. A further system of records was maintained at all offices to provide a complete registration and

cancellation history for all warehouse receipts or transfer receipts as issued by licensees and registered with the Board. In the Western Division, service was provided to allow for documentation to cover the drying and mixing of grain as carried out in semi-public terminal elevators and a constant scrutiny was maintained to see that the non-mixing provisions of the Canada Grain Act and Canada Grain Regulations were being observed.

The increased volume of bushel handlings at all points in both Divisions caused a considerable upsurge in the work of all Registration offices. In the Western Division this was particularly noticeable in the increased number of requests received daily for the registration of splits, consolidations and re-issue of warehouse receipts to cover sales of grain, shipments, stock adjustments or adjustments for storage dates. This service constitutes about one-third of the work of these offices.

Fees for registration service were charged at the rate of 4c per thousand bushels for registration and registration for cancellation in the Western Division and 1c a thousand bushels for similar service, in both categories in the Eastern Division. Total fees collected during the crop year 1963-64 amounted to \$69,013.40 as compared to \$46,932.98 for 1962-63 and \$47,910.18 shown in the 10-year average.

Table C-1—Supply and Disposition of Canadian Grain, Crop Year 1963-64

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
Supply					
Carry-over July 31, 1963	487,247,241	150,278,486	89,245,306	4,159,399	3,988,169
Production in 1963	723,442,000	453,102,000	220,664,000	12,848,000	21,116,000
Total Supply	1,210,689,241	603,380,486	309,909,306	17,007,399	25,104,169
Disposition					
Exported Overseas	589,141,413 ¹	15,958,742	32,851,128	4,855,212	13,638,472
Exported to U.S.A.	1,971,782 ²	1,573,716	8,675,198	645,504	—
Consumed in Canada ³	160,135,918	406,440,179	150,112,802	4,454,935	4,914,978
Total Disposition	751,249,113	423,972,637	191,639,128	9,955,651	18,553,450
Carry-Over (July 31st, 1964)					
On Farms (Estimated)	120,640,000	128,800,000	60,000,000	1,650,000	1,300,000
In Country, Private Terminal and Mill Elevators	201,393,327	39,349,852	39,624,533	2,439,091	1,926,115
In Semi-Public Terminal Elevators	75,051,966	6,072,786	13,116,427	1,838,649	2,169,313
In Store and Afloat to Eastern Elevators	30,190,434	2,425,595	2,750,681	453,421	645,745
In Eastern Flour Mills	2,764,150	366,879	—	—	—
In Transit by Rail—Eastern and Western Division	29,400,251	2,392,737	2,778,537	243,020	509,546
In Store and in Transit to the United States	—	—	—	427,567	—
Total in Store July 31st, 1964	459,440,128	179,407,849	118,270,178	7,051,748	6,550,719

¹Includes 53,441,754 bushels wheat flour.

²Includes 945,923 bushels wheat flour.

³Includes the following quantities subsequently exported in processed form:

Seed Wheat	3,032,942 bushels
Rolled Oats and Oatmeal	710,628 bushels
Barley Malt and Pot and Pearl Barley	5,408,858 bushels
Linseed Oil	593,641 bushels

**Table C-2—Production and Producers' Marketings in Western Canada,
by Provinces, Crop Year 1963-64**

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
Production (DBS Estimate)					
Manitoba	61,000,000	62,000,000	16,000,000	2,400,000	9,300,000
Saskatchewan	493,000,000	118,000,000	78,000,000	5,600,000	7,300,000
Alberta and British Columbia	150,800,000	127,100,000	121,300,000	3,227,000	3,711,000
Totals	704,800,000	307,100,000	215,300,000	11,227,000	20,311,000
Producers' Marketings					
(a) At Country Elevators ..					
Manitoba	50,404,916	14,211,630	8,495,091	1,424,141	7,798,077
Saskatchewan	394,381,138	18,713,209	30,482,052	4,388,333	6,003,215
Alberta	119,796,080	16,203,011	52,432,154	2,140,246	3,253,607
Totals	564,582,134	49,127,850	91,409,297	7,952,720	17,054,899
(b) At Interior Semi-Public Terminals					
Manitoba	27,192	39,397	9,820	—	—
Saskatchewan	—	—	—	—	—
Alberta	76,513	2,483	22,436	—	—
Totals	103,705	41,880	32,256	—	—
(c) At Interior Private and Mill Elevators					
Manitoba	224,926	138,272	51,740	1	166,838
Saskatchewan	2,536,828	199,158	87,583	—	79,867
Alberta	1,126,282	215,309	325,613	18,051	69,631
Totals	3,888,036	552,739	464,936	18,052	316,336
(d) Loaded over Platforms					
Manitoba	11,939	9,361	1,972	—	3,459
Saskatchewan	—	—	—	—	—
Alberta	34,405	12,238	34,665	—	—
Totals	46,344	21,599	36,637	—	3,459
Total Producers' Marketings					
Manitoba	50,668,973	14,398,660	8,558,623	1,424,142	7,968,374
Saskatchewan	396,917,966	18,912,367	30,569,635	4,388,333	6,083,082
Alberta	121,033,280	16,433,041	52,814,868	2,158,297	3,323,238
Totals	568,620,219	49,744,068	91,943,126	7,970,772	17,374,694

Table C-3—Receipts and Shipments of Canadian Grain at Terminal Elevators, Crop Year 1963-64

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
Fort William-Port Arthur					
Receipts-----	343,645,186	30,996,384	51,987,054	4,987,366	9,799,600
Shipments-----	347,279,824	35,800,620	53,159,279	4,405,393	8,861,047
Vancouver-New Westminster					
Receipts-----	150,055,399	12,182,610	30,545,298	1,676,361	6,680,269
Shipments-----	154,010,211	13,587,920	28,163,089	1,600,209	6,281,565
Victoria					
Receipts-----	7,789,967	2,549	-----	-----	110
Shipments-----	7,953,658	46,059	6,729	-----	-----
Prince Rupert					
Receipts-----	10,204,927	1,382	-----	-----	132
Shipments-----	10,474,613	35,277	-----	-----	-----
Churchill					
Receipts-----	22,280,478	-----	-----	-----	-----
Shipments-----	21,680,277	131,711	-----	-----	-----
Transcona					
Receipts-----	369,832	39,397	12,485	-----	1,371
Shipments-----	150,772	12,025	13,370	-----	1,371
Calgary					
Receipts-----	1,592,543	5,152	787,684	2,153	144,221
Shipments-----	116,400	6,034	1,027,991	2,153	144,317
Edmonton					
Receipts-----	1,849,662	14,233	30,035	2,201	111,356
Shipments-----	284,324	27,406	16,351	2,201	111,969
Lethbridge					
Receipts-----	972,132	-----	-----	-----	-----
Shipments-----	8,140	-----	-----	-----	-----
Moose Jaw					
Receipts-----	-----	-----	-----	-----	-----
Shipments-----	2,985,558	68,359	-----	-----	-----
Saskatoon					
Receipts-----	733,310	-----	-----	-----	-----
Shipments-----	1,976,015	-----	-----	-----	-----
Total Receipts-----	539,493,436	43,241,707	83,362,556	6,668,081	16,737,059
Total Shipments-----	546,919,792	49,715,411	82,386,809	6,009,956	15,400,269

Table C-4—Shipments of Foreign Grain from Canadian Elevators into Canadian Consumer Channels, Crop Year 1963-64

From	United States Corn	United States Soybeans	United States Sorghums
	bu.	bu.	bu.
Eastern Elevators-----	13,732,814	2,376,075	61,479
Fort William-Port Arthur Terminals-----	-----	-----	-----
Interior Terminals-----	-----	-----	-----
Interior Private and Mill Elevators-----	503,478	-----	-----
Pacific Coast Terminals-----	-----	-----	-----

Table C-5—Primary Receipts and Shipments at Eastern Elevators, Crop Year 1963-64

	Receipts	Shipments
	bu.	bu.
Canadian Grain		
Wheat.....	347,715,391	396,151,632
Oats.....	33,487,557	34,393,780
Barley.....	30,733,972	30,378,761
Rye.....	2,593,852	2,526,026
Flaxseed.....	7,301,268	7,260,962
Corn.....	2,943,764	2,734,124
Buckwheat.....	205,047	156,232
Soybeans.....	2,572,934	2,339,396
Peas.....	51,001	51,001
Sample Grain (lbs.).....	11,254,390	17,004,490
United States Grain		
Wheat.....	36,545,386	35,256,147
Oats.....	495,150	633,707
Barley.....	8,164,021	8,292,259
Rye.....	2,430,783	2,524,910
Flaxseed.....	569,504	569,504
Corn.....	60,325,508	60,504,939
Soybeans.....	18,094,333	17,732,644
Sorghums.....	61,479	61,479

Table C-6—Supply and Disposition of Canadian Grain in United States Positions, Crop Year 1963-64

	Wheat	Oats	Barley	Rye	Flaxseed
	bu.	bu.	bu.	bu.	bu.
Supply					
In Store and in Transit U.S.A.....	—	—	—	—	—
Receipts direct from Canada.....	1,440,879	1,573,716	8,675,198	1,073,071	—
Total Supply	1,440,879	1,573,716	8,675,198	1,073,071	—
Disposition					
Exported.....	—	—	—	—	—
Returned to Canada.....	415,020	—	—	—	—
Used Domestically.....	1,025,859	1,573,716	8,675,198	645,504	—
Total Disposition	1,440,879	1,573,716	8,675,198	645,504	—
In Store and in Transit July 31, 1964....	—	—	—	427,567	—

Table C-7—Exports of Canadian Wheat, by Seaboard Sectors, by Months, Crop Year 1963-64

	Via Canadian Pacific Seaboard Ports	Via Canadian St. Lawrence Ports	Via Canadian Atlantic Seaboard Ports	Via Churchill	Via Fort William- Port Arthur Direct	United States ¹ Imports	Total All Wheat	Wheat Flour ²	Total Wheat and Wheat Flour
	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.
1963									
August-----	9,863,791	10,444,817	—	7,952,040	912,378	31,033	29,204,059	3,038,778	32,242,837
September-----	14,005,094	16,894,195	—	10,542,093	978,393	136,560	42,556,335	1,645,211	44,201,546
October-----	16,532,393	33,427,750	4,509,413	3,186,144	1,346,248	17,834	59,019,782	2,384,123	61,403,905
November-----	15,000,849	43,139,139	7,032,910	—	105,409	17,264	65,295,571	3,881,374	69,176,945
December-----	13,014,351	22,189,501	6,558,439	—	—	542	41,762,833	5,392,778	47,155,611
1964									
January-----	18,270,683	1,807,768	8,371,500	—	—	1,353	28,451,304	6,607,136	35,058,440
February-----	11,612,535	—	10,054,394	—	—	7,947	21,674,876	6,709,082	28,383,958
March-----	14,650,557	—	7,859,673	—	—	—	22,510,230	5,277,998	27,788,228
April-----	16,920,770	20,111,468	6,160,048	—	—	18,326	43,210,612	6,360,760	49,571,372
May-----	13,528,801	40,254,672	3,119,142	—	89,787	—	56,992,402	4,065,981	61,058,383
June-----	12,612,384	49,914,703	245,312	—	1,468,605	795,000	65,036,004	4,485,302	69,521,306
July-----	15,838,704	42,504,563	—	—	2,668,243	—	61,011,510	4,539,154	65,550,664
Total Crop Year 1963-64-----	171,850,912	280,688,576	53,910,831	21,680,277	7,569,063	1,025,859	536,725,518	54,387,677	591,113,195
Total Crop Year 1962-63-----	139,522,987	111,066,033	18,701,613	21,761,757	7,873,663	1,169,390	300,095,443	27,265,254³	327,360,697
5-Year Average 1958-59 to 1962-63-----	123,054,417	104,880,439	25,582,814	20,242,176	8,221,990	2,125,108	284,134,302⁴	33,858,290	317,992,592

¹Compiled from returns of Canadian elevator licensees and shippers and advice from American grain correspondents.

²Canadian Customs returns converted to bushels—unadjusted for time lag.

³Revised—adjusted to remove effect of time lag in reports made by the Customs.

⁴Includes exports via United States Atlantic Ports (1959-60).

Table C-8—Overseas Exports of Canadian Grain, by Seaboard Sectors, by Grades, Crop Year 1963-64

Grades	Via Canadian Pacific Ports	Via Canadian ¹ St. Lawrence Ports	Via Canadian Atlantic Ports	Via Churchill	Via Fort William- Port Arthur Direct	Total
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat						
No. 1 Manitoba Northern....	9,774,163	16,596,383	9,247,604	2,122,800	788,850	38,529,800
No. 2 Manitoba Northern....	73,164,281	152,484,939	27,356,699	14,947,363	4,792,458	272,745,740
No. 3 Manitoba Northern....	42,992,766	66,011,543	8,212,901	3,074,615	341,816	120,633,641
No. 4 Manitoba Northern....	22,463,536	19,046,015	3,107,924	1,330,669	212,058	46,160,202
Number 5.....	16,585,014	5,000,563	193,474	101,000	—	21,880,051
Other Red Spring.....	549,167	518,829	—	103,830	214,783	1,386,609
Garnet.....	2,088,223	—	—	—	—	2,088,223
Alberta Winter.....	4,233,762	—	—	—	—	4,233,762
Eastern.....	—	3,306,575	—	—	—	3,306,575
No. 1 C.W. Amber Durum..	—	115,907	—	—	—	115,907
No. 2 C.W. Amber Durum..	—	2,368,045	772,719	—	—	3,140,764
No. 3 C.W. Amber Durum..	—	9,560,792	1,837,240	—	434,315	11,832,347
Ex. No. 4 C.W. Amber Durum.....	—	1,448,725	1,534,070	—	504,783	3,487,578
No. 4 C.W. Amber Durum..	—	3,569,766	1,424,200	—	162,400	5,156,366
Other C.W. Amber Durum..	—	660,494	224,000	—	117,600	1,002,094
Totals.....	171,850,912	280,688,576	53,910,831	21,680,277	7,569,063	535,699,659
Oats						
No. 2 C.W.....	—	43,482	—	—	—	43,482
Ex. No. 3 C.W.....	—	—	—	—	359,714	359,714
No. 3 C.W.....	—	722,542	185,010	—	1,448,740	2,356,292
Ex. No. 1 Feed.....	5,799,966	148,930	—	—	—	5,948,896
1 Feed.....	6,243,676	21,074	—	—	174,267	6,439,017
Mixed Feed.....	752,047	—	—	—	59,294	811,341
Totals.....	12,795,689	936,028	185,010	—	2,042,015	15,958,742
Barley						
No. 3 C.W. Six Row.....	2,709,619	95,177	—	—	1,289,230	4,094,026
No. 3. C.W. Two Row.....	114,823	—	—	—	—	114,823
No. 1 Feed.....	23,778,236	84,968	—	—	66,071	23,929,275
No. 2 Feed.....	1,527,874	410,854	—	—	1,972,055	3,910,783
Other Western.....	—	—	—	—	802,221	802,221
Totals.....	28,130,552	590,999	—	—	4,129,577	32,851,128
Rye						
No. 2 C.W.....	1,219,552	610,831	—	—	414,807	2,245,190
No. 3 C.W.....	375,354	641,332	—	—	1,472,455	2,489,141
Eastern.....	—	120,881	—	—	—	120,881
Totals.....	1,594,906	1,373,044	—	—	1,887,262	4,855,212
Flaxseed						
No. 1 C.W.....	6,353,090	4,929,018	379,550	—	1,888,124	13,549,782
No. 2 C.W.....	—	58,185	—	—	—	58,185
No. 3 C.W.....	20,305	—	—	—	10,200	30,505
Totals.....	6,373,395	4,987,203	379,550	—	1,898,324	13,638,472

¹Includes clearances of wheat direct overseas from Kingston.

Table C-9—Overseas Exports of Canadian Grain, by Ports, Crop Year 1963-64

Loaded at	Wheat (All varieties)	Oats	Barley	Rye	Flaxseed	Grand Total All Grains
	bu.	bu.	bu.	bu.	bu.	bu.
Vancouver-New Westminster	153,438,805	12,795,689	28,130,552	1,594,906	6,373,395	202,333,347
Victoria	7,937,494	—	—	—	—	7,937,494
Prince Rupert	10,474,613	—	—	—	—	10,474,613
Churchill	21,680,277	—	—	—	—	21,680,277
Port William-Port Arthur	7,569,063	2,042,015	4,129,577	1,887,262	1,898,324	17,526,241
Kingston	818,460	—	—	—	—	818,460
Montreal	127,859,661	707,835	502,145	843,450	3,630,247	133,543,338
Sorel	34,151,597	—	—	—	206,698	34,358,295
Three Rivers	31,964,203	228,193	—	—	866,297	33,058,693
Quebec	24,474,975	—	—	439,707	—	24,914,682
Baie Comeau	61,419,680	—	88,854	89,887	283,961	61,882,382
Saint John	2,978,508	185,010	—	—	—	3,163,518
West Saint John	28,625,690	—	—	—	379,550	29,005,240
Halifax	22,306,633	—	—	—	—	22,306,633
Total—Canadian Ports	535,699,659	15,958,742	32,851,128	4,855,212	13,638,472	603,003,213
U.S.A. Ports	—	—	—	—	—	—
Total to Overseas	535,699,659	15,958,742	32,851,128	4,855,212	13,638,472	603,003,213
Wheat Flour ¹	54,387,677	—	—	—	—	54,387,677
U.S.A. Imports ²	1,025,859	1,573,716	8,675,198	645,504	—	11,920,277
Grand Totals	591,113,195	17,532,458	41,526,326	5,500,716	13,638,472	669,311,167

¹Canadian Customs Returns—converted to bushels.

²Compiled from returns of Canadian elevator licensees and shippers and advice from American grain correspondents.

Table C-10—Tough and Damp Grain Dried, by Storage Position, Crop Year 1963-64

	Artificial Drying			Natural Drying	Total
	Tough	Damp	Tough and Damp		
	bu.	bu.	bu.	bu.	bu.
Lakehead					
Wheat.....	1,675,328	44,274	1,719,602	9,788,233	11,507,835
Durum.....	36,025	4,793	40,818	161,783	202,601
Oats.....	138,879	31,814	170,693	827,808	998,501
Barley.....	239,405	271,534	510,939	2,239,579	2,750,518
Rye.....	—	—	—	46,886	46,886
Flaxseed.....	14,808	373	15,181	113,950	129,131
Mixed Grain.....	—	16	16	23	39
Buckwheat.....	—	—	—	34,070	34,070
Totals.....	2,104,445	352,804	2,457,249	13,212,332	15,669,581
Pacific Coast					
Wheat.....	229,780	42,369	272,149	3,933,493	4,205,642
Oats.....	—	—	—	162,168	162,168
Barley.....	—	7,140	7,140	1,153,693	1,160,833
Rye.....	—	—	—	17,553	17,553
Flaxseed.....	—	424	424	271,997	272,421
Rapeseed.....	—	—	—	56,361	56,361
Totals.....	229,780	49,933	279,713	5,595,265	5,874,978
Interior					
Wheat.....	—	—	—	17,863	17,863
Oats.....	—	—	—	369	369
Barley.....	159	—	159	3,705	3,864
Flaxseed.....	7,144	3,757	10,901	—	10,901
Rapeseed.....	2,857	3,145	6,002	—	6,002
Tota's.....	10,160	6,902	17,062	21,937	38,999
Churchill					
Wheat.....	—	—	—	482,863	482,863
Totals, All Positions.....	2,344,385	409,639	2,754,024	19,312,397	22,066,421

**Table C-11—Weighted Average Lake Freight Rates on Canadian Grain from
Fort William-Port Arthur, Season of Navigation 1964**

Port of Discharge	Wheat	Oats	Barley	Rye	Flaxseed
	(cents per bushel)				
Georgian Bay Ports, Goderich, Sarnia and Walkerville.....	4.546	4.429	4.901	4.618	—
Port Colborne.....	5.645	6.0	6.25	—	—
Toronto.....	6.356	6.301	7.247	—	7.456
Kingston.....	6.823	6.487	6.727	—	—
Prescott.....	7.276	7.130	7.566	—	—
Montreal (Direct).....	11.019	10.275	11.738	12.298	12.540
Montreal via Port Colborne.....	12.349	—	—	—	—
Montreal via Toronto.....	12.5	—	—	—	—
Montreal via Kingston.....	12.099	—	—	—	—
Montreal via Prescott.....	11.797	—	—	—	—
Sorel (Direct).....	11.109	—	—	—	12.5
Three Rivers (Direct).....	10.773	10.351	11.930	11.5	11.139
Quebec (Direct).....	10.802	10.267	11.727	—	—
Baie Comeau.....	10.588	—	11.5	—	10.5
Halifax.....	16.610	13.462	15.807	—	—
Other Maritime Points.....	42.963	26.080	33.495	—	—
Buffalo.....	9.066	—	8.203	7.75	—
Chicago.....	—	—	6.5	7.142	—
Duluth-Superior.....	—	—	6.0	—	—
Manitowoc.....	—	—	6.5	—	—
Milwaukee.....	—	—	6.936	—	—
Oswego.....	—	—	10.5	—	—

Note—Rates originally quoted in United States funds have been converted to Canadian currency at the prevailing rates of exchange.

Table C-12—Excesses and Deficiencies in Specified Grades of Wheat Disclosed by Weighovers of Grain Stored in SEMI-PUBLIC TERMINAL Elevators, Crop Year 1963-64

Date of Weighover	Licensee	EXCESS						DEFICIENCY					
		No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 2 Canada Western Garnet	No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 2 Canada Western Garnet
	Fort William-Port Arthur	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.
Oct. 1-8, 1963.....	The Fort William Elevator Co. Ltd. "Empire".....	—	—	—	—	—	—	—	3,202.0	260.0	20,586.2	—	—
Oct. 16-22, 1963.....	Elevator "F".....	—	—	—	—	—	—	—	19.8	43.1	126.0	—	—
Dec. 20-27, 1963.....	Lakehead Terminals Ltd.....	—	1.6	136.7	—	—	—	—	—	—	5,059.1	—	—
Dec. 27, 1963- Jan 9, 1964.....	Manitoba Pool Elevators Elevator No. 3.....	—	—	—	—	—	—	—	14,403.9	58,184.5	50,411.7	—	—
Dec. 12-17, 1963.....	McCabe Grain Co. Ltd.....	—	—	—	—	—	—	—	2,213.9	8,243.7	3,397.0	—	7.2
Dec. 20, 1963- Jan. 2, 1964.....	National Grain Co. Ltd.....	9.0	—	—	—	—	—	—	2,212.8	15,544.2	12,154.8	—	—
Jan. 6-15, 1964.....	N. M. Paterson & Sons Ltd.....	—	—	—	—	—	—	—	2,895.9	4,246.7	8,157.0	—	—
Dec. 27, 1963- Jan. 3, 1964.....	Saskatchewan Wheat Pool Elevator No. 4.....	—	—	—	—	—	—	—	27,249.8	58,753.6	13,230.1	—	—
Dec. 23-31, 1963.....	Elevator No. 6.....	—	—	—	—	—	—	3.8	21,420.4	21,214.1	7,709.2	—	—
Dec. 16-20, 1963.....	Searle Grain Co. Ltd.....	—	—	—	—	—	—	—	1,100.5	10,149.4	6,789.5	—	—
Dec. 10-17, 1963.....	Superior Elevator Co. (1960) Ltd.....	—	7,978.9	—	—	—	—	1,974.3	—	5,152.8	31,454.9	—	—
Dec. 18-23, 1963.....	United Grain Growers Ltd. Thunder Bay.....	—	15.3	—	—	—	—	—	—	1,153.7	285.1	—	—
April 6-8, 1964.....	Moose Jaw, Sask. Canadian Government Elevator.....	—	—	—	—	—	—	—	46.7	1,900.1	162.8	—	—
April 9-14, 1964.....	Saskatoon, Sask. Canadian Government Elevator.....	—	778.5	—	—	—	—	—	—	1,654.8	77.7	—	—

Table C-13—Excesses and Deficiencies in Specified Grades of Wheat Disclosed by Weighovers of Grain Stored in PRIVATE TERMINAL Elevators, Crop Year 1963-64

Date of Audit, July 31, 1964	Winnipeg, Manitoba Canada Malting Co. Ltd.	
	Excess	Deficiency
	bu.	bu.
No. 1 Manitoba Hard	—	—
No. 1 Manitoba Northern	—	—
No. 2 Manitoba Northern	—	32.9
No. 3 Manitoba Northern	—	31.6
No. 1 Canada Western Garnet	—	—
No. 2 Canada Western Garnet	—	—

No wheat of the above grades was handled or in store in the following elevators:

Date of Weighover	Elevator Company	Location
January 24, 1964	National Grain Feed Mill	Fort William, Ontario
July 31, 1964	Dominion Malting Co. Ltd.	Transcona, Manitoba

**Table C-14—Overages and Shortages Disclosed by Weighovers of Canada Western
and Foreign Grain Stored in Eastern Elevators, Crop Year 1963-64**

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1964			bu.	bu.
Mar. 2-16	Baie Comeau Cargill Grain Co. Ltd.	Canada Western Wheat.....	—	67,786.7
		Canada Western Oats.....	—	108.9
		Canada Western Rye.....	—	56.2
		Canada Western Flaxseed.....	—	254.4
		U.S.A. Oats.....	—	134.6
		U.S.A. Flaxseed.....	—	76.7
Mar. 31- April 14	Goderich The Goderich Elevator and Transit Co. Ltd.	Canada Western Wheat.....	—	8,670.5
		Canada Western Oats.....	—	6,351.4
		Canada Western Barley.....	76.0	—
		Canada Western Rye.....	534.0	—
		Canada Western Grain.....	—	*83,890
		Canada Western Screenings.....	—	*91,005
		U.S.A. Sorghums.....	—	38.4
Feb. 17-20	Kingston Canada Steamship Lines Ltd.	Canada Western Wheat.....	—	8,484.2
		Canada Western Oats.....	—	359.0
		Canada Western Barley.....	131.2	—
		Canada Western Flaxseed.....	—	27.7
		U.S.A. Oats.....	—	89.2
		U.S.A. Barley.....	—	47.0
		U.S.A. Rye.....	—	65.6
Mar. 17-20	Midland Canadian National Railway Co. (Tiffin)	Canada Western Wheat.....	—	9,211.9
		U.S.A. Corn.....	—	294.7
Mar. 17-24	Midland Simcoe Elevator Co. Ltd.	Canada Western Wheat.....	—	2,427.0
		Canada Western Oats.....	—	58.6
		Canada Western Barley.....	—	478.0
		Canada Western Screenings.....	—	*440
		U.S.A. Oats.....	—	138.7
		U.S.A. Corn.....	1,338.6	—
Mar. 23	Renown Investments Ltd.	Canada Western Wheat.....	—	424.5
Jan. 29- Feb. 6	Montreal National Harbours Board No. 1 and No. 2	Canada Western Wheat.....	—	24,081.1
		Canada Western Oats.....	—	72.7
		Canada Western Barley.....	1,367.6	—
		Canada Western Rye.....	—	245.7
		Canada Western Flaxseed.....	—	1,586.3
		Canada Western Buckwheat.....	—	68.0
		Canada Western Peas.....	—	91.2
		Canada Western Grain.....	—	*5,166
		Canada Western Screenings.....	*154,550	—
		U.S.A. Wheat.....	—	2,263.0
		U.S.A. Oats.....	—	54.0
		U.S.A. Barley.....	—	1,123.8
		U.S.A. Rye.....	—	1,717.7
		U.S.A. Flaxseed.....	—	814.6
		U.S.A. Soybeans.....	—	4,467.4

*Pounds.

Table C-14—Overages and Shortages Disclosed by Weighovers of Canada Western and Foreign Grain Stored in Eastern Elevators, Crop Year 1963-64—Continued

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1964			bu.	bu.
Jan. 21-30	National Harbours Board No. 3 -----	Canada Western Wheat -----	-----	28,407.0
		Canada Western Oats -----	-----	15,444.5
		Canada Western Barley -----	-----	455.5
		Canada Western Rye -----	-----	238.5
		Canada Western Flaxseed -----	-----	91.5
		Canada Western Buckwheat -----	-----	12.2
		Canada Western Screenings -----	-----	*10,300
		U.S.A. Wheat -----	-----	1,345.1
		U.S.A. Oats -----	-----	174.8
		U.S.A. Barley -----	-----	691.0
		U.S.A. Rye -----	-----	72.2
		U.S.A. Flaxseed -----	-----	75.8
		U.S.A. Soybeans -----	-----	1,377.7
Feb. 5-11	National Harbours Board No. 4 -----	Canada Western Wheat -----	-----	9,493.8
		Canada Western Oats -----	-----	1,972.1
		Canada Western Barley -----	-----	1,452.5
Jan. 21- Feb. 14	National Harbours Board No. 5 -----	Canada Western Wheat -----	-----	16,291.9
		Canada Western Oats -----	-----	3,405.9
		Canada Western Barley -----	-----	4,162.2
		Canada Western Rye -----	-----	181.5
		Canada Western Flaxseed -----	-----	234.7
		Canada Western Grain -----	*4,206	-----
		Canada Western Screenings -----	-----	*17,280
		U.S.A. Wheat -----	-----	1,356.6
		U.S.A. Oats -----	-----	317.7
		U.S.A. Barley -----	-----	554.7
		U.S.A. Rye -----	-----	11.5
		U.S.A. Flaxseed -----	-----	20.7
		U.S.A. Soybeans -----	-----	223.4
Feb. 12	Peterborough The Quaker Oats Co. of Canada Ltd. -----	Canada Western Wheat -----	-----	64.1
Feb. 10-18	Port Colborne Maple Leaf Mills Ltd. -----	Canada Western Wheat -----	-----	3,130.3
		Canada Western Rye -----	56.5	-----
		U.S.A. Wheat -----	-----	30.5
Mar. 25-26	National Harbours Board -----	Canada Western Wheat -----	-----	3,709.1
		Canada Western Oats -----	1,459.7	-----
		Canada Western Barley -----	1,306.2	-----
Feb. 17-27	Robin Hood Flour Mills Ltd. -----	Canada Western Wheat -----	-----	6,701.4
Mar. 23- April 1	Port McNicoll Canadian Pacific Railway Co. -----	Canada Western Wheat -----	-----	10,249.2
Feb. 13-20	Prescott National Harbours Board -----	Canada Western Wheat -----	-----	16,256.6
		Canada Western Oats -----	-----	5,224.8
		Canada Western Barley -----	-----	2,201.4
		Canada Western Rye -----	-----	29.9
		Canada Western Flaxseed -----	-----	103.6
		Canada Western Grain -----	-----	*4,760
		Canada Western Screenings -----	-----	*4,880
		U.S.A. Oats -----	-----	245.1

*Pounds.

**Table C-14—Overages and Shortages Disclosed by Weighovers of Canada Western
and Foreign Grain Stored in Eastern Elevators, Crop Year 1963-64—Concluded**

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1964			bu.	bu.
Mar. 9-26	Sarnia Maple Leaf Mills Ltd.	Canada Western Wheat.....	—	10,786.3
		Canada Western Oats.....	—	364.5
		Canada Western Barley.....	—	1,386.0
		Canada Western Rye.....	—	83.6
		U.S.A. Oats.....	—	107.6
		U.S.A. Beans.....	—	21.1
Feb. 10-19	Three Rivers Three Rivers Grain and Elevator Co. Ltd.	Canada Western Wheat.....	—	17,853.5
		Canada Western Oats.....	—	1,081.8
		Canada Western Barley.....	—	360.8
		Canada Western Flaxseed.....	—	288.3
Mar. 30- April 7	Toronto Maple Leaf Mills Ltd.	Canada Western Wheat.....	—	4,288.7
		Canada Western Oats.....	—	1,233.7
		Canada Western Barley.....	—	151.2
		Canada Western Rye.....	—	91.7
		Canada Western Flaxseed.....	—	362.7
Mar. 2-5	Walkerville Hiram Walker & Sons Grain Corp. Ltd.	Canada Western Wheat.....	—	2,444.0
		Canada Western Rye.....	—	94.7
		U.S.A. Corn.....	—	1,721.8

*Pounds.

**Table C-15—Amounts Collected under the One Per Cent Levy,
Prairie Farm Assistance Act, Crop Year 1963-64**

Province	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed	Total
	\$	\$	\$	\$	\$	\$	\$
Manitoba.....	774,954.15	94,878.17	79,612.60	13,035.78	174,196.67	12,026.76	1,148,704.13
Saskatchewan.....	6,245,314.33	124,502.35	280,655.30	50,416.26	168,807.79	68,257.11	6,937,953.14
*Alberta.....	1,919,414.38	99,524.39	436,444.21	24,168.74	102,111.28	67,972.02	2,649,635.02
Totals.....	8,939,682.86	318,904.91	796,712.11	87,620.78	445,115.74	148,255.89	10,736,292.29
*Includes Peace River area in B.C.							
Penalties on late filing of returns.....							
Total collections August 1, 1963 to July 31, 1964.....							10,736,292.29

Table C-16—Licences in Force and Storage Capacity as at August 1, 1964 and a Year Ago

Kind of Licence	Licences in Force August 1		Licensed Storage Capacity August 1	
	1964	1963	1964	1963
Country Elevators.....	5,174	5,187	376,613,700	368,775,200
Terminal and Mill Elevators.....	70	69	172,275,410	172,105,410
Eastern Elevators.....	32	32	120,335,300	119,585,300
Track Buyers, Commission Merchants and Grain Dealers.....	33	33	†	†
Totals.....	5,309	5,321	669,224,410	660,465,910

†These licences do not cover grain storage facilities.

**Table C-17—Number and Kind of Licences Issued and Licensed Storage Capacity,
as at December 1st each year for the Past Five Years**

Kind of Licence	1964	1963	1962	1961	1960
	Number of Licences				
Public Country Elevator.....	5,163	5,183	5,214	5,261	5,293
Private Country Elevator.....	6	6	6	6	6
Mill Elevator.....	25	25	25	26	27
Semi-Public Terminal Elevator.....	40	40	40	40	40
Private Terminal Elevator.....	5	5	6	6	5
Eastern Elevator.....	32	32	31	32	32
Track Buyer.....	13	14	15	15	18
Commission Merchant.....	16	16	18	19	21
Grain Dealer.....	2	3	3	3	6
Totals.....	5,302	5,324	5,358	5,408	5,448
	Licensed Capacity				
	thousands of bushels				
Public Country Elevator.....	378,314	372,288	368,252	371,222	366,636
Grain Storage Buildings.....				2,086	7,241
Private Country Elevator.....	172	172	157	149	156
Mill Elevator.....	12,815	12,815	12,791	12,709	12,794
Semi-Public Terminal Elevator.....	151,394	151,394	146,714	146,774	139,974
Private Terminal Elevator.....	8,067	8,067	8,217	8,217	7,720
Eastern Elevator.....	122,335	119,585	111,575	110,955	110,435
Totals.....	673,097	664,321	647,706	652,112	644,956

Table C-18—Licensed Elevators and Storage as at December 1, 1964

Kind of Elevator	Ontario	Mani- toba	Saskat- chewan	Alberta	British Colum- bia	Quebec and Mari- times	Totals
	Number of Elevators						
Public Country.....	2	674	2,851	1,617	19	—	5,163
Private Country.....	—	3	1	2	—	—	6
Mill.....	3	6	5	9	2	—	25
Semi-Public Terminal.....	24	2	2	3	9	—	40
Private Terminal.....	2	2	—	1	—	—	5
Eastern.....	18	—	—	—	—	14	32
Totals.....	49	687	2,859	1,632	30	14	5,271
	Storage Capacity						
	thousands of bushels						
Public Country.....	1,439	48,645	199,368	126,761	2,101	—	378,314
Private Country.....	—	72	25	75	—	—	172
Mill.....	1,480	2,088	4,942	4,117	188	—	12,815
Semi-Public Terminal.....	103,447	6,000	11,000	6,100	24,847	—	151,394
Private Terminal.....	2,974	3,603	—	1,490	—	—	8,067
Eastern.....	56,666	—	—	—	—	65,669	122,335
Totals.....	166,006	60,408	215,335	138,543	27,136	65,669	673,097

Table C-19—Warehouse Receipt Registrations for Primary and Transfer Receipts and Shipments at Semi-Public Terminal Elevators and Eastern Elevators, by Area and Grain, Crop Year 1963-64 and 10-Year Average

Area	Grain	Crop Year 1963-64		10-Year Average, 1953-54 to 1962-63	
		Registered	Registered for Cancellation	Registered	Registered for Cancellation
			thousands	of bushels	
Western Division— Winnipeg, including Lakehead and Churchill	Wheat	366,339	369,352	202,472	199,408
	Oats	30,734	35,751	45,208	46,480
	Barley	46,192	47,570	62,380	62,200
	Flax	9,806	8,868	10,413	10,382
	Rye	4,989	4,407	7,040	7,481
	Mixed Grain	191	146	287	290
	Corn			2	2
	Others	395	133	180	194
Interior Elevators— Calgary, Edmonton, Lethbridge, Moose Jaw, Saskatoon and Transcona	Wheat	5,517	5,521	3,176	4,085
	Oats	59	114	356	373
	Barley	830	1,058	1,668	1,661
	Flax	257	258	195	195
	Rye	4	4	25	25
	Mixed Grain		3	2	22
	Corn	2	4	12	9
	Others	686	652	2,251	2,071
Vancouver and Prince Rupert Area	Wheat	168,267	172,648	115,782	115,046
	Oats	12,220	13,720	2,664	3,695
	Barley	30,548	28,174	23,695	23,459
	Flax	6,682	6,284	4,280	4,244
	Rye	1,680	1,605	632	627
	Mixed Grain	24	46	18	43
	Corn			1	1
	Others	6,305	5,744	3,920	4,107
Western Division— All Points	Wheat	540,123	547,521	321,430	318,539
	Oats	43,013	49,585	48,228	50,548
	Barley	77,570	76,802	87,743	87,320
	Flax	16,745	15,410	14,888	14,821
	Rye	6,673	6,016	7,697	8,133
	Mixed Grain	215	195	307	355
	Corn	2	4	15	12
	Others	7,386	6,529	6,351	6,372
Totals—All Grains		691,727	702,062	486,659	486,100
Eastern Division—	Wheat	462,046	509,675	284,565	282,162
	Oats	35,070	36,116	39,137	39,157
	Barley	39,872	39,645	61,762	61,950
	Flax	7,871	7,830	18,271	18,266
	Rye	5,157	5,184	5,629	5,719
	Mixed Grain	225	340	464	455
	Corn	63,756	63,728	28,739	28,430
	Screenings	2,918	2,990	1,989	1,975
	Peas	51	51	156	155
	Soybeans	21,810	21,366	9,748	9,661
	Buckwheat	205	156	286	294
	Others	61	61	500	500
Totals—All Grains		639,042	687,142	451,246	448,724

APPENDIX D

Inspection Branch

M. J. CONACHER, *Chief Grain Inspector*

Under Section 32 of the Canada Grain Act, the Grain Inspection Branch in the Western Division establishes grades on carlots of grain on samples drawn during unloading by officials of the Inspection Branch at the Lakehead, Pacific Coast, Churchill, Winnipeg, Calgary, Edmonton, Moose Jaw, Saskatoon, Lethbridge, Medicine Hat and Keewatin. Also, all grain shipped from terminal and mill elevators is officially sampled and inspected. At the primary inspection points of Winnipeg, Calgary and Edmonton, samples placed in railway cars by country elevator agents are removed and graded, at shippers' requests.

In the Eastern Division, sampling and grading service is provided on request at Chatham and Toronto for Eastern grown grain. At Montreal, Quebec, Sorel, Three Rivers, Baie Comeau, St. John and Halifax grain loaded into vessels for export is sampled and reviewed with respect to grade.

Grades of all grain in store in all Terminal and Eastern elevators weighed over during the crop year are verified by officials of the Inspection Branch.

Under Sections 26, 28 and 31 of the Canada Grain Act, the Board holds the Chief Grain Inspector responsible for the collection of samples of grain of the current crop year's crops of western and eastern grain, and from such samples to prepare tentative standard and standard export samples of statutory and commercial grades for submission to the Committees on Grain Standards. The Inspection Branch of the Board also handles the distribution of the standard and standard export samples.

Crop Conditions and Grades, 1963, Western Canada

The 1963-64 crop year was an historical one in terms of volume of grain produced and marketed. The growing season of 1963 was extremely variable following an unusually dry spring, followed by adequate precipitation over most of the Prairies, and widespread excellent harvest weather. Notable exceptions to this pattern were: a belt of drought across southern Alberta and southwestern Saskatchewan; serious lack of topsoil moisture in the Peace River area, followed by excessive rains in September, and flood conditions over much of eastern Manitoba.

Despite these exceptions, average yields and quality of grain were high. Saskatchewan produced the largest crop of wheat in its history; the overall production of wheat in western Canada was a new high record; the generally dry condition of this crop was extremely important in making possible the record high export movement. No. 2 Manitoba Northern was by far the predominating grade of wheat marketed, at 53% of carlots inspected. No. 1 Manitoba Northern was 5.2%. Only 2.3% of all wheat shipped was graded tough, and 0.03% was damp. Only 18.3% of amber durums shipped were No. 4 Canada Western and lower.

As usual, the predominating grade of barley shipped was No. 1 Feed at 53.7%, but there were adequate supplies of malting and pearling grades, with 12,972 cars of these grades shipped. 26.6% of oats shipped qualified for millers' grades of No. 3 Canada Western or higher. Rye shipments averaged lower in quality than normal, with only 42.1% of carlots graded No. 1 or No. 2 Canada Western.

The quality of oilseeds was generally high, despite extremely severe damage from excess moisture in parts of Manitoba. Flaxseed, rapeseed and domestic mustard seed shipments into export markets were mostly No. 1

grade. The new Canadian variety of field peas, named "Century", was produced in commercial quantity for the first time in 1963. This is a most promising variety, of excellent appearance, and reportedly of fine cooking quality.

Crop Conditions and Grades, 1963, Eastern Canada

The spring of 1963 was wet and cold over much of Ontario and Quebec, hampering seeding and retarding growth of cereal crops. This was followed by an unusually dry period, and crop prospects looked poor by the end of June. Conditions improved during the first half of July, and most districts obtained better yields than had been expected.

72.6% of carlots of Canada Eastern winter wheat were graded No. 1 or No. 2. 80.3% of carlots of barley inspected were dry No. 3 Canada Eastern or higher grade. Oats generally were damaged from lodging and weathering, particularly in Quebec. Very little millers' quality of oats was produced.

There was a wide range of grades of corn, but No. 1 and No. 2 Canada Eastern grades predominated. 87.5% of the dry beans inspected were Extra No. 1 or No. 1 Canada Eastern. The quality of soybeans was generally excellent. 1,107 carlots out of 1,131 inspected were No. 1 or No. 2 Canada Yellow.

Samples Submitted for Grading

During the 1963-64 crop year, 15,059 samples submitted "Subject to Inspector's Grade and Dockage" were inspected. In the previous crop year of 1962-63, 22,183 such samples were graded.

The reductions in requests for this service were the result of the generally higher quality of the harvest in 1963-64. Few cases of disagreement arise between producers and country elevator agents on high grade grain.

Farmers' Complaints and Inquiries on Carlot Shipments

During the crop year 1963-64, the Inspection Branch received 20 requests from producers to establish whether the identity of special bin grain had been preserved in the handling through country elevators. In six instances it was established that the identity of the farmer's grain had not been preserved.

Preparation of Standard Samples

The preparation of tentative standard and standard export samples in 1964, was quite different from previous years and more difficult for two reasons. First, the reduction in primary inspection service made it impossible to obtain material in the traditional manner from carlots of grain passing through Winnipeg to the Lakehead. Secondly, more than the usual range of types of damage occurred in the 1964 crop. The first problem was resolved by a greater concentration on obtaining material directly from elevator agents and farmers, through co-operation and assistance from the grain trade. The second problem necessitated a particularly meticulous appraisal of crop conditions in different areas as the harvesting season progressed, and a very large collection of samples.

In the season of 1964, over 1,000 two-bushel bags of Western grain were collected by the Inspection Branch for the preparation of tentative standard and standard export samples. From these, 57 tentative samples were prepared. The Committee on Western Grain Standards established 39 of these as standard samples of statutory grades, 7 as standard samples of commercial grades, and 11 as standard export samples. Distribution was made to 120 organizations and individuals in 45 countries outside Canada.

Ascertainment of Test Weight per Bushel

On recommendation of the Committee on Western Grain Standards, the Board directed that effective August 1, 1964, test weight per bushel on all grain shipped out of terminal and eastern elevators shall be ascertained by the Avery (British standard) apparatus, or by other means that will give equivalent results. The reason for this change was the fact that the Canadian method of ascertainment had understated the test weight, by comparison with methods used in most other countries.

Tagging of Railway Cars

Commencing December 15, 1964, all railway cars carrying bulk grain billed from points in the Western Division were required to have two Board of Grain Commissioners' identification tags affixed at or near the door latches, one on each side of the car. The purpose of these tags is to reduce delays and errors in the documentation and reporting of inspections. Previously, information as to point of origin and identification of the party to whom the documents should be issued, was transcribed from railway waybills. At the outset the new procedure is an obvious improvement; more experience is required before its full value can be determined.

Varietal Identification Projects

The Inspection Branch has continued to provide a special service to plant breeders of the Department of Agriculture and to the Associate Committee on Grain Research of the National Research Council, and has also worked closely with the Plant Products Division of the Department, and other branches of the Board, in attempting to control the production of inferior unlicensed varieties of wheat and barley.

Samples of new varieties are submitted to the Inspection Branch by plant breeders as early as possible in their development. These samples are examined and a report made on the desirability of the kernel types and where the variety would fit into the grading pattern if it should be produced. The plant breeder uses this information in conjunction with other factors to decide whether or not he should continue the variety in his program. In 1964, the Inspection Branch examined and made reports on over 3,000 plant breeders' samples. Work on selection of desirable kernel types from samples of promising lines of new and old varieties was continued.

The Inspection Branch also assisted in discovering and dealing with several unlicensed varieties of wheat and barley grown in Western Canada.

Transfers of Inspection Staff

With the unprecedented pressure on the port terminals, it became evident early in the 1963-64 crop year that existing staffs of grain inspectors would not be able to handle the work there. In order to cope with this problem, the Board imposed a fee for the removal of samples from railway cars at the interior points, and provided this service only on request of shippers. The result was a great drop in the demand for the service. This made it possible to transfer experienced staff from the interior points to the ports.

Seven grain inspectors and three grain inspection assistants were transferred to Vancouver and Montreal from Winnipeg and Calgary.

Staff Training

There is no educational institution that offers training in the very complicated technology of visual grain inspection, and grain inspectors

must be trained on the job. Therefore, staff training continues to be a very important part of Inspection Branch operations and has been expanded in 1964.

The program was organized and is directed by the Special Assistant to the Chief Grain Inspector. In 1964, a Grain Inspector 3 was added to the Head Office establishment. His responsibilities include assisting in directing and preparing material for use in the staff training program. A senior inspector at each inspection point is appointed as local staff training officer and reports to Head Office.

In 1964, the senior staff training officer at Head Office was authorized by the Plant Products Division to make seed analyses of domestic mustard seed and rapeseed for inspection purposes and to train and qualify Inspection Branch employees in this work. Eighteen grain inspectors have qualified under the program and seed analyses which were formerly made for the Inspection Branch by the Plant Products Division, are now made by grain inspectors of the Inspection Branch.

A new and more comprehensive staff training manual of almost 100 pages has been prepared for publication and will be released shortly for Inspection Branch operational staff.

Publications

This is the fourth year of publication of the Official Canadian Grain Grading Guide and the Canadian Grain Inspectors' Manual. The demand for these handbooks has increased steadily; nearly 900 Grading Guides, and over 300 of the Manuals had been distributed by the end of the calendar year.

The two supplements to the Grain Inspectors' Manual, on Automatic Grain Samplers and Stored Grain Pests have also proven of interest to people in various parts of the world who are engaged in the handling or inspection of grain.

Foreign Visits and Visitors

In the calendar year 1964, 96 people from 31 different countries outside of Canada visited the head office of the Grain Inspection Branch in Winnipeg. Many of these also visited field offices of the Branch in order to witness inspection operations in relation to the actual physical handling of grain in Canada.

The Board was particularly honoured by a visit from Mr. Howard H. Woodworth, Chief of the Grain Inspection Branch, Agricultural Marketing Service of the United States Department of Agriculture. Also, the Canadian Chief Grain Inspector and Mr. M. M. Ainslie, Assistant Chief Grain Inspector, attended a joint conference of the National (U.S.A.) Association of Chief Grain Inspectors and U.S. Federal Grain Division Supervisors. Liaison at these levels has contributed greatly to understanding of mutual problems, and toward negotiations such as those pertaining to the handling and inspection of United States grains in Canadian elevators.

Public Relations in Canada

Over 375 Canadians paid their first visit to head offices of the Grain Inspection Branch during 1964. These included producers, country elevator agents, superintendents, students in agriculture, and other people interested in grading or handling of grain.

Seventeen addresses were delivered in conferences or meetings outside of Government organizations, by the Chief Grain Inspector and Assistant Chief Grain Inspector during the year. Total attendance at these was estimated at over 2,300, the majority of whom were farmers.

WESTERN DIVISION

Table D-1—Carlot Inspections by Points, Crop Year 1963-64, Compared with 1962-63

	1963-64	1962-63	1963-64	1962-63
			percent of total	
Fort William.....	225,396	144,780	57.8	54.0
Winnipeg.....	12,258	8,185	3.1	3.0
Churchill.....	12,025	10,859	3.1	4.5
Moose Jaw.....	2,349	2,182	0.6	0.8
Saskatoon.....	6,422	5,214	1.6	1.8
Calgary.....	7,697	4,246	2.0	1.6
Edmonton.....	1,865	661	0.5	0.2
Medicine Hat.....	3,719	1,622	1.0	0.6
Lethbridge.....	962	295	0.2	0.1
Prince Rupert.....	5,548	2,358	1.4	0.8
Vancouver.....	111,998	87,547	28.7	32.6
Totals.....	390,239	267,949	100.0	100.0

Table D-2—Carlot Inspections, Crop Year 1963-64

Grade	Carlots	Percentage	Percentage of Total Wheat Inspected
WHEAT			
1 Hard.....	1	*	—
1 Manitoba Northern.....	15,160	5.2	—
2 Manitoba Northern.....	154,386	53.0	—
3 Manitoba Northern.....	78,578	27.0	—
4 Manitoba Northern.....	20,739	7.1	—
No. 4 Special.....	80	*	—
No. 5.....	10,512	3.6	—
No. 6.....	1,536	0.5	—
Feed.....	15	*	—
Garnet.....	1,184	0.4	—
Tough.....	7,017	2.4	—
Damp.....	42	*	—
Smutty.....	21	*	—
Rejected.....	2,258	0.8	—
Others Red Spring.....	78	*	—
Total Red Spring Wheat.....	291,607	100.0	93.0
1 Canada Western Amber Durum.....	516	2.8	—
2 Canada Western Amber Durum.....	5,350	28.9	—
3 Canada Western Amber Durum.....	5,984	32.4	—
Extra 4 Canada Western Amber Durum.....	3,247	17.6	—
4 Canada Western Amber Durum.....	2,353	12.7	—
5 Canada Western Amber Durum.....	467	2.5	—
6 Canada Western Amber Durum.....	—	—	—
Tough Durum.....	99	0.5	—
Others Durum.....	484	2.6	—
Total Amber Durum Wheat.....	18,500	100.0	5.9
Total Soft White Spring Wheat.....	269	—	—
Total Mixed Wheat.....	163	—	—
Total Alberta Winter Wheat.....	2,953	—	1.1
Total All Wheats.....	313,492	—	100.0

Table D-2—Carlot Inspections, Crop Year 1963-64—Continued

Grade	Carlots	Percentage
OATS		
1 Canada Western	—	—
2 Canada Western	12	0.1
Extra 3 Canada Western	225	1.3
3 Canada Western	4,490	26.6
Extra 1 Feed	3,218	19.0
1 Feed	7,924	46.8
2 Feed	322	1.9
3 Feed	65	0.4
Mixed Feed	47	0.3
Tough	515	3.0
Damp	4	*
Rejected	50	0.3
Others	44	0.3
Total Oats	16,916	100.0
BARLEY		
1 Canada Western Six-Row	—	—
2 Canada Western Six-Row	115	0.3
3 Canada Western Six-Row	10,033	24.4
1 Canada Western Two-Row	—	—
2 Canada Western Two-Row	158	0.4
3 Canada Western Two-Row	2,666	6.5
1 Feed	22,021	53.7
2 Feed	2,632	6.4
3 Feed	243	0.6
Tough	2,928	7.2
Damp	129	0.3
Rejected	99	0.2
Others	22	*
Total Barley	41,046	100.0
RYE		
1 Canada Western	49	1.4
2 Canada Western	1,467	40.7
3 Canada Western	1,706	47.4
4 Canada Western	66	1.9
Ergoty	260	7.2
Tough	52	1.4
Damp	—	—
Rejected	1	*
Others	1	*
Total Rye	3,602	100.0
FLAXSEED		
1 Canada Western	9,509	94.3
2 Canada Western	55	0.6
3 Canada Western	71	0.7
4 Canada Western	4	*
Tough	257	2.6
Damp	3	*
Rejected	112	1.1
Others	69	0.7
Total Flaxseed	10,080	100.0

Table D-2—Carlot Inspections, Crop Year 1963-64—Concluded

Grade	Carlots	Percentage
Corn.....	39	—
Sunflower Seeds.....	4	—
Mixed Grain.....	95	—
Screenings.....	538	—
Buckwheat.....	185	—
Peas.....	94	—
Rapeseed.....	3,381	—
Sample Grain.....	165	—
Safflower Seed.....	—	—
Mustard Seed.....	550	—
Condemned Grain.....	52	—
Grand Total.....	390,239	—

*Less than 0.05%.

Table D-3—Carlots of Tough, Damp and Straight Grain Inspected, Crop Year 1963-64

Grain	Tough	Damp	Tough and Damp	Straight	Total
Wheat.....	7,116	42	7,158	306,334	313,492
Oats.....	515	4	519	16,397	16,916
Barley.....	2,928	129	3,057	37,989	41,046
Rye.....	52	—	52	3,550	3,602
Flaxseed.....	257	3	260	9,820	10,080
Totals.....	10,868	178	11,046	374,090	385,136
Others.....	—	—	—	—	5,103**
All Grains.....	—	—	—	—	390,239
Percentage of Total					
Wheat.....	2.3%	*%	2.3%	97.7%	100.0
Oats.....	3.0	*	3.0	97.0	100.0
Barley.....	7.1	0.3	7.4	92.6	100.0
Rye.....	1.4	—	1.4	98.6	100.0
Flaxseed.....	2.5	*	2.5	97.5	100.0
Principal Grains.....	2.8	*	2.8	97.2	100.0
Others.....	—	—	—	—	100.0**

*Less than 0.05%.

**Details not available.

Table D-4—Number of Two-Pound Samples "Subject to Grade and Dockage" Inspected, Crop Year 1963-64 compared with Crop Year 1962-63

Point	1963-64	1962-63
Number of Samples		
Winnipeg.....	7,822	14,429
Calgary.....	1,767	1,738
Edmonton.....	2,001	3,545
Moose Jaw.....	62	168
Saskatoon.....	395	457
Lethbridge.....	3,012	1,846
Totals.....	15,059	22,183

Table D-5—Carlots Re-Inspected, Crop Year 1963-64

Point	Inspected	Re-Inspected	Un-Changed	Grades Raised	Grades Lowered	Dockage Raised	Dockage Lowered
Fort William.....	225,396	14,986	13,214	1,542	55	15	160
Winnipeg.....	12,258	1,067	883	134	24	—	26
Churchill.....	12,025	1,020	975	43	1	—	1
Moose Jaw.....	2,349	170	166	4	—	—	—
Saskatoon.....	6,422	530	491	37	—	1	1
Calgary.....	7,697	456	385	57	5	7	2
Edmonton.....	1,865	304	272	29	3	—	—
Medicine Hat.....	3,719	234	183	21	27	1	2
Lethbridge.....	962	37	35	2	—	—	—
Prince Rupert.....	5,548	347	328	17	—	2	—
Vancouver.....	111,998	11,320	10,066	1,191	23	27	13
Totals.....	390,239	30,471	26,998	3,077	138	53	205
Percentage of Total Carlots.....	100.0	7.8	6.9	0.8	0.04	0.01	0.05
Percentage of Re-Inspections							
Fort William.....	—	100.0	88.2	10.2	0.4	0.1	1.1
Winnipeg.....	—	100.0	82.7	12.6	2.3	—	2.4
Churchill.....	—	100.0	95.6	4.2	0.1	—	0.1
Moose Jaw.....	—	100.0	97.7	2.3	—	—	—
Saskatoon.....	—	100.0	92.7	6.9	—	0.2	0.2
Calgary.....	—	100.0	84.5	12.5	1.1	1.5	0.4
Edmonton.....	—	100.0	89.5	9.5	1.0	—	—
Medicine Hat.....	—	100.0	78.2	9.0	11.5	0.4	0.9
Lethbridge.....	—	100.0	94.6	5.4	—	—	—
Prince Rupert.....	—	100.0	94.5	5.0	—	0.5	—
Vancouver.....	—	100.0	88.9	10.6	0.2	0.2	0.1
Totals.....	—	100.0	88.6	10.1	0.4	0.2	0.7

Table D-6—Summary of Carlot Inspections Appealed, Crop Year 1963-64

Item	Carlots	Percentage	Carlots	Percentage
Left as Graded.....	920	95.5	—	—
Grades Raised.....	31	3.2	—	—
Grades Lowered.....	12	1.3	—	—
Totals.....	963	100.0	—	—
Total Carlots Inspected.....			390,239	100.0
Total Appeals.....			963	0.2
Total Grades Changed.....			43	0.01

Table D-7—Vessel Shipments Inspected, Crop Year 1963-64

Grain	Fort William and Port Arthur	Vancouver	Victoria	Prince Rupert	Churchill	Total
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat-----	347,642,938	153,438,803	8,096,322	10,474,614	22,863,637	542,516,314
Oats-----	35,124,904	12,795,691	-----	-----	110,116	48,030,711
Barley-----	46,834,762	28,130,553	-----	-----	-----	74,965,315
Rye-----	4,440,900	1,594,906	-----	-----	-----	6,035,806
Flaxseed-----	8,499,988	6,373,395	-----	-----	-----	14,873,383
Buckwheat-----	85,321	-----	-----	-----	-----	85,321
Peas-----	9,515	-----	-----	-----	-----	9,515
*Sample Grain-----	218,826	-----	-----	-----	-----	218,826
*Screenings-----	2,837,658	828,246	-----	-----	215,440	3,881,344
*Rapeseed-----	-----	5,182,204	-----	-----	-----	5,182,204
*Mustard Seed-----	-----	649,048	-----	-----	-----	649,048
*Mustard Seed (U.S.A. Origin)-----	-----	6,429	-----	-----	-----	6,429
Totals-----	445,694,812	208,999,275	8,096,322	10,474,614	23,189,193	760,744,216

*In bushels of 50 lbs.

**Table D-8—Carlot Shipments ex Terminal and Mill Elevators Inspected,
Crop Year 1963-64**

Grain	Winnipeg	Fort William and Port Arthur	Calgary	Edmonton	Moose Jaw
Wheat.....	94	366	61	98	1,696
Oats.....	117	413	37	86	25
Barley.....	360	371	613	15	8
Flaxseed.....	3	207	73	111	14
Rye.....	—	8	1	—	—
Mixed Grain.....	7	23	—	—	16
Corn.....	4	—	—	—	—
Buckwheat.....	—	15	—	—	—
Peas.....	2	—	—	—	—
Screenings.....	381	5,136	224	87	38
Rapeseed.....	3	3	—	131	—
Sample Feed Grain.....	38	—	—	—	1
Mustard Seed.....	1	—	80	33	—
Sample Grain.....	28	18	18	—	34
Salvage Grain.....	3	—	—	—	—
Totals.....	1,038	6,560	1,107	561	1,832
	Saskatoon	Lethbridge	Medicine Hat	Vancouver, Victoria and Prince Rupert	Churchill
Wheat.....	1,069	2	3	108	—
Oats.....	34	—	—	261	7
Barley.....	9	—	—	16	—
Flaxseed.....	4	—	7	1	—
Rye.....	—	—	—	6	—
Mixed Grain.....	5	—	—	10	—
Corn.....	—	—	—	—	—
Buckwheat.....	—	—	—	—	—
Peas.....	—	—	—	—	—
Screenings.....	401	5	16	2,818	21
Rapeseed.....	109	—	—	—	—
Sample Feed Grain.....	—	1	—	9	—
Mustard Seed.....	—	8	—	5	—
Sample Grain.....	60	—	4	4	—
Salvage Grain.....	—	—	—	—	—
Totals.....	1,691	16	30	3,238	28

EASTERN DIVISION

Table D-9—Carlot Inspections Eastern Grain, Crop Year 1963-64, by Grains and Points

Grain	Montreal	Toronto	Chatham	Total
Wheat.....	38	553	3,545	4,136
Oats.....	—	10	153	163
Barley.....	—	5	441	446
Rye.....	—	—	79	79
Buckwheat.....	—	—	3	3
Corn.....	—	1	2,259	2,260
Beans.....	—	—	265	265
Soybeans.....	—	59	1,072	1,131
Flaxseed.....	—	—	12	12
Totals.....	38	628	7,829	8,495

Table D-10—Carlot Inspections Eastern Grain, Crop Year 1963-64, by Grains, Grades and Points

Grade	Montreal	Toronto	Chatham	Total
WHEAT				
1 Canada Eastern White Winter.....	—	79	726	805
2 Canada Eastern White Winter.....	20	117	1,929	2,066
3 Canada Eastern White Winter.....	—	12	159	171
4 Canada Eastern White Winter.....	—	1	8	9
5 Canada Eastern White Winter.....	—	1	1	2
1 Canada Eastern Mixed Winter.....	—	1	41	42
2 Canada Eastern Mixed Winter.....	—	3	90	93
3 Canada Eastern Mixed Winter.....	—	—	5	5
4 Canada Eastern Mixed Winter.....	—	1	—	1
Tough.....	18	319	573	910
Smutty.....	—	3	—	3
Weevilly.....	—	10	3	13
Sample.....	—	5	10	15
Condemned.....	—	1	—	1
Totals.....	38	553	3,545	4,136
OATS				
2 Canada Eastern White.....	—	1	29	30
3 Canada Eastern.....	—	—	63	63
4 Canada Eastern.....	—	5	58	63
Tough.....	—	4	3	7
Totals.....	—	10	153	163
BARLEY				
1 Canada Eastern Six-Row.....	—	—	1	1
2 Canada Eastern Six-Row.....	—	—	1	1
3 Canada Eastern Six-Row.....	—	1	213	214
2 Canada Eastern Two-Row.....	—	—	2	2
3 Canada Eastern Two-Row.....	—	—	140	140
4 Canada Eastern.....	—	—	81	81
5 Canada Eastern.....	—	—	1	1
Tough.....	—	4	2	6
Totals.....	—	5	441	446
RYE				
2 Canada Eastern.....	—	—	7	7
3 Canada Eastern.....	—	—	6	6
Tough.....	—	—	62	62
Damp.....	—	—	3	3
Sample.....	—	—	1	1
Totals.....	—	—	79	79

**Table D-10—Carlot Inspections Eastern Grain, Crop Year 1963-64,
by Grains, Grades and Points—Concluded**

Grade	Montreal	Toronto	Chatham	Total
BUCKWHEAT				
2 Canada Eastern.....	—	—	3	3
Totals	—	—	3	3
CORN				
Extra Dry 1 Canada Eastern Yellow.....	—	—	252	252
1 Canada Eastern Yellow.....	—	—	348	348
Extra Dry 2 Canada Eastern Yellow.....	—	—	281	281
2 Canada Eastern Yellow.....	—	—	415	415
Extra Dry 3 Canada Eastern Yellow.....	—	—	92	92
3 Canada Eastern Yellow.....	—	—	178	178
Extra Dry 4 Canada Eastern Yellow.....	—	—	11	11
4 Canada Eastern Yellow.....	—	—	47	47
5 Canada Eastern Yellow.....	—	—	16	16
Tough.....	—	—	211	211
Damp.....	—	1	280	281
Moist.....	—	—	112	112
Wet.....	—	—	12	12
Sample.....	—	—	4	4
Totals	—	1	2,259	2,260
BEANS				
Extra 1 Canada Eastern Pea.....	—	—	40	40
1 Canada Eastern Pea.....	—	—	192	192
2 Canada Eastern Pea.....	—	—	27	27
3 Canada Eastern Pea.....	—	—	5	5
Tough.....	—	—	1	1
Totals	—	—	265	265
SOYBEANS				
1 Canada Yellow.....	—	—	308	308
2 Canada Yellow.....	—	59	740	799
3 Canada Yellow.....	—	—	12	12
4 Canada Yellow.....	—	—	2	2
Tough.....	—	—	9	9
Damp.....	—	—	1	1
Totals	—	59	1,072	1,131
FLAXSEED				
1 Canada Eastern.....	—	—	9	9
Tough.....	—	—	3	3
Totals	—	—	12	12
Totals, All Grains	38	628	7,829	8,495

Table D-11—Cargo Inspections, Eastern Grain, Crop Year 1963-64

Grain	St. John and Halifax	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.	bu.
Wheat.....	—	1,446,824	—	3,072,458	4,519,282
Rye.....	—	—	—	132,636	132,636
Buckwheat.....	—	6,843	—	—	6,843
Corn.....	—	1,607	—	—	1,607
Soybeans.....	—	161,883	—	1,235,745	1,397,628
Totals.....	—	1,617,157	—	4,440,839	6,057,996

Table D-11A—Cargo Inspections, Western Grain, Crop Year 1963-64

Grain	St. John and Halifax	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.	bu.
Flaxseed.....	319,146	1,109,581	—	—	1,428,727
Buckwheat.....	—	4,760	—	—	4,760
Peas.....	9,341	35,211	—	—	44,552
Domestic Mustard Seed.....	—	18,564	—	—	18,564
Totals.....	328,487	1,168,116	—	—	1,496,603

**Table D-12—Inspections, Eastern Grain in Bins, Trucks or Warehouses,
Crop Year 1963-64**

Grain	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.
Wheat.....	3,985	—	—	3,985
Corn.....	59,332	—	3,483	62,815
Beans.....	—	—	320,046	320,046
Soybeans.....	10,720	—	800	11,520
Totals.....	74,037	—	324,329	398,366

Table D-13—Inward and Export Cargoes Sampled and Grade Checked, Crop Year 1963-64

	Montreal	Sorel	Three Rivers	Quebec	Halifax and St. John	Baie Comeau	Total
	bu.	bu.	bu.	bu.	bu.	bu.	bu.
Eastern Grain							
Inward	1,913,358	—	—	—	—	—	1,913,358
Export	3,676,199	—	—	—	18,644	—	3,694,843
Western Grain							
Inward	16,488,044	—	—	—	437,337	—	16,925,381
Export	130,121,157	34,358,239	32,525,624	25,021,647	54,174,924	61,726,905	337,928,496
Totals	152,198,758	34,358,239	32,525,624	25,021,647	54,630,905	61,726,905	360,462,078

Table D-14—Grain Sampled but not Inspected, Crop Year 1963-64

	Montreal	Toronto and Chatham	Sorel, Three Rivers and Quebec	Halifax and St. John	Baie Comeau	Total
Eastern Grain						
Carlots	273	1	—	—	—	274
Inward Cargoes (bu.)	—	—	—	—	—	—
Outward Cargoes (bu.)	56,282	18,752	—	—	—	75,034
Bin Lots (bu.)	604,422	—	—	—	—	604,422
Western Grain						
Carlots	279	1	—	—	—	280
Inward Cargoes (bu.)	719,210	26,664	—	—	—	1,183,211
Outward Cargoes (bu.)	354,214	159,285	—	—	—	513,499
Bin Lots (bu.)	126,468	—	—	—	—	126,468
U.S.A. Grain						
Carlots	258	—	—	—	—	258
Inward Cargoes (bu.)	1,611,115	—	—	—	—	1,737,095
Outward Cargoes	19,077,962	—	32,891,862	125,980	49,419,369	101,515,173
Bin Lots	481,027	—	262,251	—	—	743,278
Australian Grain						
Inward Cargoes (bu.)	—	—	278,703	—	—	278,703
Totals—Cars	810	2	278,703	—	—	812
—Bushels	23,030,700	204,701	33,432,816	689,297	49,419,369	106,776,883

APPENDIX E

Grain Weighing Branch

H. C. BRITTON, *Chief Weighmaster*

Under the provisions of Sections 33 and 124 of the Canada Grain Act, all grain received into or shipped from licensed terminal elevators is weighed under supervision of the Board's Weighing staffs. Weighing services are also provided at licensed mill elevators in the Western Division.

During the Crop Year 1963-64 services were provided at 45 semi-public and private terminal elevators, and when required, at 27 mill elevators in the Western Division. Weighing services were also provided at Baie Comeau.

All scales and equipment for transferring grain to scales on receipt and from scales for shipment in all licensed terminal elevators and serviced mill and Eastern elevators were regularly inspected under the provisions of Section 92 of the Act. In accordance with the special arrangement with the Standards Branch of the Department of Trade and Commerce, all scales in licensed terminal and Eastern elevators were inspected, verified and stamped by the Board's scale inspectors acting as inspectors under the Weights and Measures Act. Special inspections were made when any doubt arose as to the accuracy of a scale.

Newly constructed elevator facilities and alterations to elevators and grain handling equipment were inspected by officials of the Branch to ensure that no condition existed which might affect the accuracy of the weighing of grain received at or shipped from these elevators.

The Branch maintained a close check on reported outturns at Eastern elevators of cargoes loaded at Lakehead elevators, and thorough investigations were made in cases where complaints were received relating to reported excessive outturn shortages. Detailed reports of the results of these investigations were submitted to the Board.

Under provisions of Sections 139 and 140 of the Canada Grain Act, weigh-overs were conducted at 15 terminal elevators and 20 Eastern elevators, and results were submitted to the Board for comparison with records of outstanding warehouse receipts.

The greatly increased quantities of export grain shipped from ports at the Pacific Coast and the Lakehead during the crop year produced a correspondingly higher level of activity by members of weighing staffs on duty in those areas. A large part of the grain shipped from the Lakehead was reloaded to ocean-going vessels through elevator facilities at ports on the Lower St. Lawrence River. The construction of new elevator storage space and installation of improved grain handling machinery at Montreal, Sorel and Three Rivers has greatly speeded up the movement of grain to overseas destinations.

The operators of terminal elevators have co-operated with the Board's weighing officials in the placing of identifying signs on all pieces of equipment used in receiving and shipping grain, to facilitate frequent checking. Another important program now well under way in the elevators provides for the encasing of certain internal spouting in either concrete or reinforcing steel plate to prevent leakage of grain from spouting which might become worn or broken.

During the month of December, 1964, the Chief Weighmaster spent three weeks on a trip to the United Kingdom and Europe, visiting the Ports of Rotterdam, Holland, and Hamburg in Western Germany. At both ports,

he met with port authorities, grain elevator operators and grain importers. The trip was mainly for observation, also to study methods used in discharging Canadian grain overseas.

Floating elevators are used to unload about 75% of the grain cargoes, which are then loaded to barges and transferred inland. The remainder of the cargoes are unloaded at land-based elevators and processed into flour, etc. Both ports were very busy. They are well equipped and nearly all the facilities are comparatively new and very modern. They are prepared for increased grain handling; this looks promising to Canadian agriculture.

The findings in the United Kingdom — London, Liverpool and Glasgow— were similar, although more grain is stored at these ports. The distance to mills, etc., is necessarily restricted to the canal system inland. The methods of discharge are ample although not as modern as those on the Continent which have been rebuilt since the Second World War.

The trip was most informative and will be of great value in the future, when a more knowledgeable approach can be applied in case any problems arise involving the handling of Canadian grain.

During the year 1963-64 the staff training program was stepped up. Under the Staff Training Officer, material and information was supplied to all points for the purpose of uniformity in weighing procedure throughout the system. Classes and seminars were held in the winter months for all operational levels, and the interest shown by members of the branch in respect to our program was most encouraging. This training proved highly beneficial. The program was further accelerated when steps were initiated to have the Staff Training Officer commence a training program in Vancouver.

Summaries of grain weighed during the crop year, and other related information, are given in the tables attached to this Appendix.

Table E-1—Gross Quantities of all Grains Weighed at Terminal Elevators in the Western Division during 1963-64 Crop Year

Point	Wheat	Oats	Barley	Rye	Flaxseed	Corn	Buckwheat	Peas	Mustard Seed	Rapeseed	U.S. Mustard Seed	Miscellaneous
	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	lbs.
RECEIPTS												
Fort William-Port Arthur.....	352,201,749	31,696,772	53,837,756	5,106,571	11,241,671	—	395,559	9,521	284	—	—	101,654,800
Vancouver-New Westminster.....	155,493,954	12,368,014	30,930,552	1,746,338	7,613,471	—	—	—	929,411	5,964,070	—	66,888,365
Victoria.....	8,313,136	2,549	—	—	110	—	—	—	85	—	—	—
Prince Rupert.....	10,663,083	1,382	—	—	132	—	—	—	—	—	—	—
Churchill.....	22,761,337	—	—	—	—	—	—	—	—	—	—	—
Calgary.....	1,639,868	5,152	788,004	2,153	158,234	—	—	—	197,066	1,609	—	12,230
Edmonton.....	1,927,134	14,244	30,092	2,201	129,844	2,358	—	—	43,823	226,124	—	7,560
Lethbridge.....	992,582	—	—	—	—	—	—	—	—	—	—	—
Moose Jaw.....	—	—	—	—	—	—	—	—	—	270,822	—	—
Saskatoon.....	753,002	—	—	—	—	—	—	—	—	—	—	—
North Transcona.....	376,451	40,005	12,694	—	1,558	—	—	—	—	—	—	1,143,710
Total Receipts.....	555,122,296	44,128,118	85,599,098	6,857,263	19,145,020	2,358	395,559	9,521	1,170,669	6,462,625	—	169,706,665
SHIPMENTS												
Fort William-Port Arthur.....	347,674,975	36,078,725	54,406,643	4,408,243	9,036,689	—	120,421	9,515	—	5,960	—	579,561,040
Vancouver-New Westminster.....	154,058,266	13,604,662	28,167,148	1,605,120	6,376,287	—	—	—	649,148	5,187,061	6,429	594,318,038
Victoria.....	8,115,405	79,000	6,729	—	110	—	—	—	—	—	—	15,444,000
Prince Rupert.....	10,474,614	36,313	—	—	—	—	—	—	—	—	—	25,750,790
Churchill.....	21,680,277	131,711	—	—	—	—	—	—	—	—	—	13,317,040
Calgary.....	116,400	6,034	1,027,991	2,153	146,118	—	—	—	167,786	1,484	—	3,334,380
Edmonton.....	284,324	27,406	16,351	2,201	113,146	3,985	—	—	38,252	201,503	—	4,161,200
Lethbridge.....	8,140	—	—	—	—	—	—	—	—	—	—	288,690
Moose Jaw.....	2,985,558	68,359	—	—	—	—	—	—	—	—	—	119,800
Saskatoon.....	1,976,015	—	—	—	—	—	—	—	—	246,690	—	3,294,950
North Transcona.....	151,845	12,025	13,397	—	1,558	—	—	—	—	—	—	1,224,040
Total Shipments.....	547,525,819	50,044,235	83,638,259	6,017,717	15,673,908	3,985	120,421	9,515	855,186	5,642,698	6,429	1,240,814,968

Table E-2—Number of Cars Leaking and Cars with Missing Seals at the Lakehead, Other Points and at Winnipeg Yards, by Railways, for the Crop Year 1963-64

Destination	Cars Leaking		Missing Seals	
	C.N.R.	C.P.R.	C.N.R.	C.P.R.
Lakehead Elevators.....	24,270	24,182	1,507	1,762
Other Points.....	9,264	9,160	2,216	1,795
Totals.....	33,534	33,342	3,723	3,557
Totals—Both Railways.....	66,876		7,280	
Winnipeg Yards.....	125	229	138	166

Table E-3—Number of Cars Weighed at all Points and Percentages of such Cars found Leaking or with Defective Seals, Crop Years 1962-63 and 1963-64

	Number		Percentage of Total	
	1963-64	1962-63	1963-64	1962-63
Cars Weighed in.....	392,579	270,047	100.0	100.0
Inward Cars Leaking.....	66,876	41,823	17.0	15.4
Inward Cars with Missing or Defective Seals.....	7,280	5,117	1.8	1.8
Cars Weighed Out.....	16,850	13,982	—	—

Table E-4—Average Reported Outturn Shortages on Vessel Shipments of Grain from Fort William-Port Arthur to Canadian and United States Ports during the 1963-64 Crop Year

Grain	Bushels Shipped	Shortage in Pounds per 1,000 bushels	
		1963-64	1962-63
CANADIAN PORTS			
Wheat.....	314,980,102	41.32	39.80
Durum Wheat.....	24,092,187	40.84	46.49
Oats.....	32,628,497	24.02	25.84
Barley.....	35,316,016	37.82	40.12
Rye.....	1,431,659	47.20	67.24
Flaxseed.....	6,746,377	42.17	49.77
Buckwheat.....	85,321	37.84	34.50
Sample Grain (in lbs.).....	10,972,740	.75 lbs. per 1,000 lbs.	.87 lbs. per 1,000 lbs.
Screenings (in tons).....	67,324	1.43 lbs. per ton	2.07 lbs. per ton
UNITED STATES PORTS			
Wheat.....	780,749	71.91	121.59
Oats.....			73.44
Barley.....	8,477,333	66.14	50.71
Rye.....	1,073,588	72.01	87.58
TOTAL CANADIAN AND UNITED STATES PORTS			
Wheat.....	315,760,851	41.40	40.32
Durum Wheat.....	24,092,187	40.84	46.49
Oats.....	32,628,497	24.02	26.84
Barley.....	43,793,349	43.30	40.91
Rye.....	2,505,247	57.86	72.01
Flaxseed.....	6,746,377	42.17	49.77
Buckwheat.....	85,321	37.84	34.50
Sample Grain (in lbs.).....	10,972,740	.75 lbs. per 1,000 lbs.	.87 lbs. per 1,000 lbs.
Screenings (in tons).....	67,324	1.43 lbs. per ton	2.07 lbs. per ton

APPENDIX F

The Grain Research Laboratory

G. N. IRVINE, *Director*

Section 22 of The Canada Grain Act requires that "The Board shall maintain an efficient and adequately equipped laboratory for research work in relation to grain".

A summary of the Laboratory's work for 1964 follows. It deals with the quality of grain marketed in 1963-64, the estimated quality of the 1964 crops, variety testing, research, and other related activities. A separate Annual Report is prepared by the Laboratory to put on record in greater detail data on the quality of Canadian grain and progress made in research.

Quality of Grain Marketed in 1963-64

During the course of the 1963-64 crop year, the Laboratory carried out its annual systematic check of the quality of the various cereal grains as they moved forward from the country elevator to the domestic or the export market. These data for red spring wheat, durum wheat, barley, flax and rapeseed, and other cereals are, in keeping with previous practice, reported in the Laboratory's 1964 Annual Report.

The predominant grades of red spring wheat, unloaded at terminal elevators in 1963-64, were No. 2 Northern (over 50% of the total) and No. 3 Northern (over 25%). Average protein content for the grades No. 1 to No. 4 Manitoba Northern was 14.1% and bushel weight was well over 60 lb. By comparison with that of the previous crop year, the wheat of the four principal grades marketed in 1963-64 was about equal in protein content, but lower in bushel weight especially for the grades No. 3 and No. 4 Northern. All grades were significantly higher in baking strength. A comparison of the average quality for the wheat exports from the three seaboard areas shows that the Churchill exports were highest in bushel weight for all four grades. Churchill shipments of No. 2 and No. 3 Northern averaged slightly higher in protein, but for the top three grades there was relatively little difference in baking strength of shipments from the three export areas. No. 4 Northern wheat shipped from Churchill and Atlantic ports was somewhat stronger than that shipped from Pacific ports.

The kernel weight of durum wheat marketed in 1963-64 was considerably below that for the previous year; the values were however about equal to the average for the five preceding crop years. For all grades, macaroni quality was excellent, although for the No. 4 C.W. and the No. 5 C.W. grades, the level was slightly below that for the previous year. Rheological properties of the doughs were satisfactory. Barley marketed in 1963-64 was sound and of better quality than that of the previous year. The Two-row grades, which were available in greater than average quantity, were relatively low in nitrogen content; this led to an increased export demand for these grades. Flax was slightly lower in quality than that marketed in 1962-63 while rapeseed shipments were much the same in quality as those for the previous year.

Estimated Quality of the 1964 Crop

Throughout most of the grain-growing area of the Prairies, subsoil moisture levels in the early spring ranged from poor to only fair. Widespread spring rains, while hampering seeding, provided sufficient moisture to assure good germination. Rainfall during the growing season was above

normal in most districts in Manitoba and eastern Saskatchewan, about normal in Alberta (except in the Peace River district where it was about twice the normal amount), and below normal for western Saskatchewan. Temperatures were generally normal during June, somewhat above average during July, and for the most part below average during August. Widespread and periodic heavy rains in late August and throughout September delayed harvesting generally. An early and rather severe frost also had a detrimental effect on all crops. The return of favorable weather during October permitted harvesting to be completed, but with a larger than normal proportion of the various grains expected to fall into the lower grades. Estimated production of the 1964 western crops are: red spring wheat, 539 million bushels; amber durum wheat, 33.7 million bushels; barley, 155 million bushels; flax, 18 million bushels; and rapeseed, 11.3 million bushels. The principal grades for red spring wheat are expected to be No. 2 (28%), No. 3 (30%), and No. 4 Northern (23%), with about 10% of the crop being of lower grade. Average protein content (14.9%) is equal to that of the 1936 crop, the second-highest level ever recorded; the high protein level is reflected in the baking strength.

Compared with 1963-64 fourth quarter Pacific cargo exports, the new crop from the Western Prairies (Alberta and western Saskatchewan) is lower in bushel weight and 1000 kernel weight; protein content is higher and this is reflected in a higher baking strength although the supporting value in the blend-bake test is essentially unchanged. Baking absorption is higher.

Compared with the fourth quarter Atlantic cargoes, the new-crop wheat from the eastern Prairies (Manitoba and eastern Saskatchewan) is for the most part lower in bushel weight and slightly lower in flour yield. Protein content is higher; and for the grades Nos. 1 and 2 Northern, this is reflected in a higher baking strength. Supporting value or carrying power is about the same for all grades from No. 1 to No. 4 Northern. There will be appreciable quantities of No. 5 wheat available. This wheat, although lower in bushel weight than 1963-64 fourth quarter cargo shipments of this grade, is appreciably higher in protein, lower in ash, and of a much higher baking strength.

The 1964 durum wheat crop was slightly larger than the average for the last ten years. This together with a large carry-over from the 1963, will assure an ample supply of most grades. About 60% of the 1964 crop will grade No. 2 and No. 3 C.W. Average protein content of the new durum wheat crop is 15.0% and average bushel weight is 65.3 lb. (Avery equivalent). Compared with the 1963 crop, the new crop is appreciably higher in protein content, generally higher in percentage of vitreous kernels, but lower in bushel weight and kernel weight. The quality of macaroni is high and about equal to that of the 1963 crop. Compared with the 1963-64 export shipments of durum wheat, the new crop is about equal in over-all quality.

Production of barley declined in 1964, due mainly to reduced acreage and lower yields in Saskatchewan. Because of widespread frost and poor harvesting weather, much of the crop in the northern areas was damaged. It is estimated that not more than 10% of the crop will enter the Canada Western grades. Nitrogen content, bushel weight, and kernel weight are similar to those for last year. Levels of enzymatic activity and malt extract of the Canada Western grades are expected to be equal to those for last year. The over-all supply of malting barley will be tight, but material from the 1963 crop and carefully selected lots from the No. 1 Feed grade should supply the normal demands for the domestic and export markets.

The 1964 flax crop is of about average quality (oil content 41.6%) but because of unfavorable harvest conditions, larger amounts than normal will fall into the lower grades. Rapeseed production has, for several years, continued to increase markedly. The 1964 crop, about $\frac{1}{3}$ larger than the previous crop, has an average oil content of 43.8%, which is about 1% higher than that of the previous crop.

Service to the Grain Inspection Branch

The Laboratory continued to work closely with the Grain Inspection Branch in several different areas by providing scientific and other services. Detailed quality tests were carried out on the Standard and the Standard Export samples of spring and durum wheat and barley, as well as on numerous parcels of grain used in the preparation of these, on parcels of grain from individual cargoes, and on a number of unlicensed varieties of commercially grown wheat. Supervision of the moisture-testing equipment located at all Inspection offices was continued.

Other work included lipoxidase determinations on durum wheat, fatty acid tests on oil seeds, quality tests on commercial parcels of wheat subjected to prolonged storage, quality checks on parcels of tough and damp grain dried at terminal elevators, chemical tests for the contamination of grain by mercurial fungicides, germination tests on barley, and preparation of calibration charts for the determination of moisture content, using the Model 919 moisture meter, in durum wheat, red spring wheat, low bushel weight red spring wheat, rye, buckwheat, and navy beans. Moisture meters, balances, weights, thermometers, and pint measures, were checked for calibration and, if necessary, repaired. The Laboratory's workshop, drawing and photographic sections also provided a variety of services. In addition the Laboratory provided two technicians to assist the grain inspectors in staffing the Board of Grain Commissioners trailer exhibit which this summer visited thirteen agricultural fairs in the Prairie Provinces.

Bulletins and Maps

Quality data for the different grades of the 1964 western grain crops were compiled and presented to the Committee on Western Grain Standards in October. These data were also published in two wheat protein maps (a preliminary and a final), three 1964 crop bulletins (one for wheat, one for barley, one for flax and rapeseed), and in a series of press releases. There is a considerable demand for information about the quality of the new crop of these Western Canadian cereal grains and the Laboratory makes a quite extensive distribution of these publications.

The Laboratory continues to publish quarterly bulletins on the quality of export cargoes of hard red spring and of amber durum wheat. These bulletins provided an up-to-date, running summary of the average of the quality of each grade of spring wheat and of durum wheat exported from the Atlantic and from the Pacific seaboard in each quarter of the 1963-64 crop year. This information, together with brief notes on the laboratory methods used in obtaining it, is presented in four languages, English, French, German, Spanish. There is a separate English-Japanese edition of the hard red spring wheat cargo bulletins. The cargo bulletins are extensively distributed by the Laboratory, by Government Trade Commissioners, and by the Canadian Wheat Board.

The total distribution of Laboratory bulletins and maps this year was over 50,000.

Variety Testing

The Laboratory takes an active part each year in a continuing program of quality testing of plant breeders' varieties of various cereal grains. This work, sponsored by the Associate Committee on Grain Research, is designed to ensure the maintenance of a high level of quality in Western Canadian cereal crops. In 1964, these studies included tests on 25 varieties of hard red spring wheat, 14 varieties of durum wheat, and 7 varieties of barley. As the final phase in the spring wheat portion of this program, the Laboratory has organized a world-wide collaborative study of the quality of some new bread wheats; twenty-six cereal technologists from seven countries are presently testing samples of the 1964 crop of Marquis and the new wheats to determine whether, in all respects, these new wheats are "equal to Marquis". Results of this collaborative study will be considered by the Associate Committee on Grain Research at its 1965 meeting.

Detailed milling and baking quality tests were made on 27 wheat varieties grown in Canada in the Uniform Quality Nursery. This test, conducted annually, provides an opportunity to evaluate the milling and baking qualities of various world wheats when grown under Canadian conditions, or of wheat varieties used as parent stock in wheat breeding. The effect of environment on the milling and macaroni-making qualities of several durum wheat varieties was studied for material grown at stations of different latitude in Manitoba.

The Laboratory also participated in the annual variety testing program of the Crop Quality Council of the United States. Twenty-eight spring and six winter wheat samples from several areas of the north central and northwestern states were tested this year.

The Associate Committee on Grain Research at its 1964 meeting reviewed results of the final stages of detailed quality tests for three barley varieties. One of these has been licensed as Gateway 63 and is intended as a replacement for Gateway in Alberta as it is superior in field performance. Also rated equal to O.A.C. 21 in malting quality was Trophy, an American-produced malting barley. Trophy, if licensed and grown in Canada, would be graded no higher than No. 1 Feed because it cannot readily be distinguished from other barleys (of inferior malting quality) that are grown in Canada for feed purposes. The third variety was withdrawn from further consideration because it has no agronomic advantages over present varieties.

Four new strains of promising malting quality produced at Brandon Research Station are now being tested by pilot malting and brewing. These strains are fully resistant to smuts and are comparable in yield to varieties presently grown for feed. Results from the 1963 and 1964 tests will be considered by the Associate Committee on Grain Research at its 1965 meeting.

Service to Other Organizations

A close liaison has been maintained with the Technical Services and Market Research Department of the Canadian Wheat Board. Quality data were provided on world wheats entering European and eastern markets as well as on flour samples obtained by technical representatives during visits in overseas market areas. Numerous requests for technical information, advice, and laboratory services from cereal laboratories in several countries, government agencies in Canada and other countries, universities, grain and milling companies, were processed.

The Laboratory continues active support of professional and technical associations in chemistry and cereal technology. Dr. Irvine served as Program Chairman for the technical sessions of the American Association of

Cereal Chemists at its annual meeting in Toronto in May. An important reference book in the field of cereal science entitled "Wheat: Chemistry and Technology", edited by Dr. Hlynka of the Laboratory staff, was published this year by the American Association of Cereal Chemists. In addition, staff members participated in the programs of the International Association for Cereal Chemistry, the Chemical Institute of Canada, American Association of Cereal Chemists, Association of Operative Millers, and others.

Senior Laboratory staff were invited participants at meetings of a number of farm organizations at various places in Western Canada during the year.

Research

To support the service provided to the Board of Grain Commissioners and to the Canadian Wheat Board, the Grain Research Laboratory conducts a continuing program of basic and applied research.

In one project the effect of the addition of certain organic solvents to doughs was studied. The aim was to obtain new information on the relation between the fat components in the flour and the flour proteins. The results suggest such organic solvents denature the proteins, rather than simply disrupt the fat-protein platelet structure of the gluten as is generally supposed.

The ion-exchange methods developed previously for the separation of flour proteins have been further improved to eliminate the possibility that the protein components obtained by fractionation are artifacts produced by the procedures themselves. These improved methods have been used to study the distribution of proteins found in different varieties of wheat and also to isolate some fractions which are of interest because of their sulfhydryl group reactivity.

Research with radioactive labeled improvers has demonstrated that only a fraction of the sulfhydryl flour components are normally reactive. Work is underway to isolate and identify some of these components. Work on the amino acid composition of Canadian cereals continues, with work being currently carried out on barley, oats, and flax.

Chemical studies of the disulfide interchange reaction in dough have been made through sulfhydryl determinations, pH measurements, and extensigraph tests. The results suggest the possibility that the interchange reaction is either catalyzed by mercaptide or by sulfenium ions, depending on the pH of dough.

In a number of countries ascorbic acid is added to flour as an improving or maturing agent; its action in dough has been studied. Ascorbic acid, though a reducing agent, can exert its improving action as a sulfhydryl-oxidizing agent through enzyme systems.

In applied wheat research, studies have continued on "no fermentation" bread, where the dough receives a vigorous "mechanical development" during the mixing. Until this year the methods used have paralleled that developed by the British Baking Industries Research Association, in which conventional dividing and panning are retained. This work is now being extended to study continuous types of process where the dough is extruded directly from the mixer into the baking pans.

Starch damage in flours has been investigated by farinograph and baking tests. An excess of damaged starch increases mixing time and gives a high farinograph absorption whereas baking absorption does not increase.

The Laboratory has developed baking techniques to simulate baking conditions and methods used in other countries. This gives us a better understanding and knowledge of the suitability of Canadian flour for a wide variety of breadmaking methods. An investigation of a baking procedure

used in Guatemala was initiated using the Maturograph and the Oven-Rise Recorder. Data from these instruments provide an indication of the performance of a given flour under specific conditions of formula and method.

Agglomerated or instantized flour has recently aroused much interest and has been introduced to the retail market. A small agglomerator has been designed and constructed in the Laboratory and flour comparison studies are being carried out. In addition, agglomerated durum flour is being investigated as a substitute for semolina in the production of macaroni.

Work on oil seeds has included a collaborative study on the Swedish method of oil analysis and the modification of a rapid spectrophotometric method for fat acidity in corn and wheat oils for use with rape and flax oils.

Brownness in macaroni is an undesirable characteristic of certain foreign durum wheats and some of the lower grade of Canadian durum. It has now been fairly well established that brownness is produced by a nonenzymic reaction of certain reducing substances such as ascorbic acid, hydroquinone, etc., with a copper-protein complex.

Because of the relatively low correlation between pigment loss during macaroni processing and lipoxidase activity, work is now in progress in an effort to isolate lipoxidase by column chromatography. Studies in this direction will, it is hoped, elucidate more completely the mechanism of pigment destruction. A short method for the determination of lipoxidase activity, as an index of quality in durum semolina, has been developed using a Beckman Oxygen Sensor instead of the Warburg apparatus.

In barley research, studies on chill haze protein in barley and malt continued. The amino acid distributions of protein-tannin complexes isolated from barley, malt and beer by adsorption on nylon or polyvinylpyrrolidone were compared with that for chill haze. They closely resembled each other. These results confirm and extend the hypothesis that a watersoluble protein-tannin complex that is characteristic of chill haze is present in barley and persists relatively unchanged from barley through malting and brewing to beer. Starch gel electrophoresis of the materials showed that they were heterogeneous.

In studies of the germination process in barley, it was shown that gibberellic acid treatment had no influence on the levels of β -amylase, ascorbic acid, or glutathione, but increased production of α -amylase. N-ethylmaleimide suppressed the development of α -amylase. But gibberellic acid in combination with N-ethylmaleimide restored activity. This suggests that α -amylase production is not influenced by the ascorbic acid-glutathione system. An additional study indicated that gibberellic acid increased phytase activity and also ribonuclease activity. However, the total amount of ribonuclease was not affected, so that gibberellic acid appeared to stimulate activity of ribonuclease rather than increase its production.

An analytical study on the new malt mill of the European Brewery Convention showed that the results for fine-grind extract were essentially identical with those obtained by the classic cone-type mill. The results for coarse-grind extract were higher for the E.B.C. mill than for the classic roller mill, but the two sets of results were closely correlated. Thus the E.B.C. mill produces a smaller difference between fine and coarse extracts. The E.B.C. mill is a cutting machine with different sieves for fine and coarse grind and offers some advantages for interlaboratory comparisons in malt analysis.

Staff

Dr. K. H. Tipples, who had spent the previous year in the Laboratory on a National Research Council Postdoctorate Fellowship, joined the staff early in the year. A former staff member, Dr. W. Bushuk, returned to the Laboratory late in the year after spending almost 2½ years as Director of Research with The Ogilvie Flour Mills Company, Limited, Montreal. Dr. P. C. Williams, Research Officer with the Agricultural Research Institute, Wagga Wagga, New South Wales, Australia, arrived in the Laboratory in October to spend a year as a National Research Council Postdoctorate Fellow.

Two senior members of the Laboratory's technical staff, with a combined service record of over 44 years, resigned during the year. Mr. V. Martens, who joined the Laboratory staff in August 1940, was transferred to the Executive Office to become the Assistant Secretary of the Board of Grain Commissioners for Canada. Mr. R. J. Cheale, the Laboratory's photographer, left the Laboratory in mid-year to take a technical position with the Canada Department of Agriculture Research Station, Winnipeg.

Among the junior technical, clerical, and stenographic staff there were ten appointments and six resignations. The summer student positions were filled by Mr. Stephen Philips and Mr. Gordon De Wolfe.

Overseas Visits and Visitors

Dr. Irvine travelled to Europe in the early summer to attend the Congress and the Executive and Technical Committee meetings of the International Association for Cereal Chemistry in Vienna, as well as the meeting of the Association for Cereal Research in Detmold. During the course of this trip he also visited laboratories in Germany, Scandinavia, and the United Kingdom. In the fall, Dr. Irvine spent a month in the Far East visiting mills and bakeries in Hong Kong and Japan.

Under the sponsorship of the Canadian Wheat Board, missions of flour millers from the Philippines, the United Kingdom, and Venezuela, visited the Laboratory this year. FAO trainees from Jordan, Egypt, Turkey, Saudi Arabia, and Iran also toured the Laboratory. Other visitors were from Australia, Belgium, Brazil, Colombia, Czechoslovakia, England, France, Guatemala, Hong Kong, India, Ireland, Japan, Mexico, New Zealand, Norway, Pakistan, Scotland, Singapore, Sweden, U.S.A., and the U.S.S.R.

A P P E N D I X G

Canadian Government Elevators

A. H. WILSON, *General Manager*

In accordance with Section 166 of the Canada Grain Act and Order-in-Council P.C. 1372 of August 19, 1925, the Board manages and operates five interior terminal elevators at Moose Jaw, Saskatoon, Calgary, Edmonton and Lethbridge, and one terminal elevator at Prince Rupert.

During the crop year 1963-64, the elevators continued to be operated as semi-public terminals. The following report deals with the 1963-64 crop year, unless otherwise indicated.

Handlings

Receipts and shipments in 1963-64 were close to the average experienced during the past ten years. This is in sharp contrast to 1962-63 when both receipts and shipments were the lowest since the early post-war-years. Receipts totalled slightly over 17 million (7.2 million in 1962-63) while shipments amounted to close to 18 million (10.3 million in 1962-63). The increase is almost entirely accounted for by the extensive use being made of the Prince Rupert elevator for shipment of wheat to China.

The stocks in store on July 31, 1964, were the lowest they had been in over ten years. This reduction was due to the shipments of wheat from the Moose Jaw and Saskatoon elevators to meet commitments on the Russian sale last winter. As the table below shows, present stocks in these two elevators are very low.

A moderate to heavy level of activity continued at the Calgary and Edmonton elevators. In addition to storing 1.5 million bushels of wheat, Calgary continued to handle large quantities of barley for local use. In 1963-64, this amounted to over one million bushels. The Edmonton elevator held 1.75 million bushels of wheat in store. Both of these elevators handled moderate quantities of oil seeds, including flaxseed, rapeseed and mustard seed. Together, they received close to 700,000 bushels of these products. The Saskatoon elevator has for the past several years handled rapeseed. In 1963-64 it handled some 270,000 bushels as compared to 170,000 in 1962-63. Both these figures are well below those for several previous years.

The Lethbridge elevator received close to a million bushels of wheat with almost this amount remaining in store July 31. This is in sharp contrast to 1962-63, when the stock figure at July 31 was almost nil.

Wheat was again the principal grain received, accounting for over five million bushels at the interior terminals and over ten million at Prince Rupert, for a total of fifteen million out of overall receipts of seventeen million. Barley accounted for just over 800,000 bushels while oilseed receipts totalled close to one million bushels. Negligible quantities of oats and corn, less than 25,000 bushels, were handled.

Receipts and shipments by elevators were as follows:

Elevator	Capacity	Stocks August 1, 1963	Net Receipts	Net Shipments	Stocks July 31, 1964
	million bu.	bu.	bu.	bu.	bu.
Moose Jaw	5.50	3,154,186	1,397	3,053,917	101,666
Saskatoon	5.50	1,572,593	986,373	2,222,705	336,261
Calgary	2.50	370,020	2,710,207	1,465,066	1,615,161
Edmonton	2.35	176,684	2,248,440	664,574	1,760,550
Lethbridge	1.25	160	972,132	8,140	964,152
Prince Rupert	1.25	749,459	10,233,465	10,503,341	479,583
TOTALS	18.35	6,023,102	17,152,014	17,917,743	5,257,373

Charges

The charges for services — storage, elevation, cleaning, drying, etc., were in accordance with the maximum tariff of charges established by the Board, with the following exceptions:

Storage: Charges for storage at interior elevators are 1/45c instead of 1/30c per bushel per day. This does not apply to rapeseed and mustard seed for which the maximum of 1/30c is charged. (At Prince Rupert, the charge is also the maximum of 1/30c).

Elevation: The only departure from the maximum tariff is in the case of Special Bin Rapeseed, where the charge is 2½c instead of 5c.

Maintenance

No major maintenance projects were carried out in this crop year. The extensive maintenance and equipment renewal program, begun a number of years ago, is now almost complete.

The projects actually undertaken include repairs to roofs of the loading and unloading sheds and welfare building at Moose Jaw; the painting of the cupola and some concrete restoration at Edmonton. This work was carried out by our Repair and Reconstruction Unit. At Saskatoon the program to replace railway trackage was continued.

New Equipment

The most important project was the installation of four Superior Cylinder-type cleaning machines, along with allied equipment, in the Prince Rupert Elevator. This equipment will permit of a much more efficient and speedy cleaning operation.

Annual Meeting

A meeting of all Superintendents was held in Winnipeg in October, 1963. The purpose of the meeting was to permit the Superintendents, under the direction of the General Manager, to discuss mutual problems and to become acquainted with the overall policy of the system.

It is planned to hold such meetings annually henceforth, rotating the location to the various cities where elevators in the system are located.

Proposals for Administrative Changes

A series of proposals was made to the Honourable the Minister, through the offices of the Board, to make certain changes in administration and staff establishments, for the purpose of increasing efficiency and reducing operating costs. These proposals have been approved in principle by the Honourable the Minister. They include the reduction of operating and clerical staffs; the centralization of clerical work at Head Office and its preparation by Electronic Data Processing Equipment; and the building of new offices at Moose Jaw, Saskatoon, and Calgary at the plant sites. It is pointed out that the reduction of staff will be effected through normal retirements and resignations and that no member of the continuing staff will be laid off.

The new offices at Moose Jaw and Saskatoon located at the elevator sites were constructed and occupied by the end of the year. The office at Calgary will be completed and ready for occupancy early in 1965.

While not in effect as yet, steps are being taken to implement the centralization of clerical work at Head Office. The policy of reducing clerical and operating staffs is being implemented by not replacing employees, where possible, when there are retirements or resignations.

Staff

It is with regret that the death is reported of Mr. M. W. MacKenzie, Superintendent of the Prince Rupert elevator, who passed away in July, 1964. He was replaced by Mr. K. G. MacDonald, formerly Office Manager at Prince Rupert.

Staff employed as at December 31, 1964, compared with December 31, 1963, is as follows:

	1964		1963	
	Continuing Establish-ment	Casuals	Continuing Establish-ment	Casuals
Winnipeg (Head Office).....	8	—	8	—
Moose Jaw.....	27	—	30	—
Saskatoon.....	28	—	30	2
Calgary.....	26	6	26	4
Edmonton.....	32	13	32	1
Lethbridge.....	19	—	19	—
Prince Rupert.....	28	26	23	31
Repair and Reconstruction Unit.....	3	—	3	—
Totals.....	171	45	171	38

Revenue and Expenditure

Revenue and expenditure for the fiscal year 1963-64 compared with 1962-63, were as follows:

	1963-64	1962-63
Revenue.....	\$1,104,498	\$1,063,460
Expenditure.....	1,408,516	1,314,027
Deficit.....	304,018	250,567

For the first nine months of the 1964-65 fiscal year, cash revenue was \$871,729, and expenditure was \$980,484.

APPENDIX H

Table H-1—EXPENDITURE, by Point, Branch and General Item, Fiscal Year ended March 31, 1964

Point and Branch	Salaries	Rent	Travel	General	Total
	\$	\$	\$	\$	\$
Winnipeg					
Executive—Salaries of Commissioners	45,666.60				45,666.60
Executive—General	64,316.26	14,177.67	12,128.95	10,110.72	100,733.60
Assistant Commissioner	13,599.96	316.00	1,602.69	829.42	16,348.07
Research Laboratory	276,185.59	40,271.96	6,026.50	87,170.28	409,654.33
Statistics	167,605.08	17,578.48	1,985.95	36,821.87	223,991.38
Appeal Tribunal	7,470.00			2,411.02	9,881.02
Standards Committee			2,099.60	1,110.00	3,209.60
Inspection	596,733.34	30,657.53	7,883.88	56,457.26	691,732.01
Weighing	55,980.07	1,920.60	1,540.61	413.88	59,855.16
Churchill					
Inspection	8,060.06	15.60	4,489.92	297.18	12,862.76
Weighing	7,911.61	10.40	3,399.86	165.87	11,487.74
Keewatin					
Inspection	5,218.26	—	—	—	5,218.26
Weighing	6,308.60	—	—	2.76	6,311.36
Saskatoon					
Assistant Commissioner	14,199.96	1,112.50	2,174.05	340.64	17,827.15
Inspection	45,551.54	2,012.49	102.10	1,719.98	49,386.11
Weighing	34,734.34	—	98.80	—	34,833.14
Moose Jaw					
Inspection	15,855.39	—	298.80	214.47	16,368.66
Weighing	20,648.70	—	—	—	20,648.70
Regina					
Assistant Commissioner	14,199.96	1,715.00	1,251.87	283.28	17,450.11
Medicine Hat					
Inspection	315.00	—	—	—	315.00
Weighing	10,952.63	—	423.11	—	11,375.74
Lethbridge					
Inspection	10,319.88	—	67.60	139.95	10,527.43
Weighing	5,520.00	—	—	—	5,520.00
Calgary					
Inspection	114,610.12	6,969.14	783.62	5,585.79	127,948.67
Weighing	63,514.56	729.69	1,162.14	79.38	65,485.77
Edmonton					
Inspection	111,077.19	13,641.75	886.58	3,382.16	128,987.68
Weighing	19,620.74	66.00	48.00	—	19,734.74
Assistant Commissioner	14,199.96	1,826.00	2,095.09	333.88	18,454.93
Vancouver					
Inspection	336,021.87	7,201.74	10,300.08	13,759.83	367,283.52
Weighing	266,273.16	1,986.32	4,731.09	1,186.73	274,177.30
Statistics	15,604.56	5,849.16	—	3,590.79	25,044.51
Victoria					
Inspection	20,035.59	—	12.00	71.05	20,118.64
Weighing	11,431.54	—	70.10	—	11,501.64

**Table H-1—EXPENDITURE, by Point, Branch and General Item, Fiscal Year
ended March 31, 1964—Concluded**

Point and Branch	Salaries	Rent	Travel	General	Total
	\$	\$	\$	\$	\$
Prince Rupert					
Inspection	19,065.42	—	258.85	76.95	19,401.22
Weighing	14,509.07	—	916.22	—	15,425.29
Fort William					
Inspection	946,894.57	24,780.00	9,472.21	42,929.62	1,024,076.40
Weighing	803,711.91	5,328.00	34,162.58	7,073.28	850,275.77
Toronto					
Inspection	11,037.01	1,200.00	667.12	1,501.48	14,405.61
Weighing	—	—	—	—	—
Chatham					
Inspection	40,595.67	4,320.00	11,717.86	2,457.54	59,091.07
Ottawa					
Inspection	15,999.96	—	2,920.48	107.27	19,027.71
Montreal					
Inspection	196,961.97	5,085.00	32,485.41	6,451.52	240,983.90
Weighing	9,900.00	1,100.00	11.00	469.47	11,480.47
Statistics	18,366.68	2,200.00	—	760.82	21,327.50
Baie Comeau					
Inspection	18,943.35	—	345.00	77.04	19,365.39
Weighing	—	—	—	—	—
Totals	4,495,727.73	192,071.03	158,619.72	288,383.18	5,134,801.66

**Table H-2—ACCRUED REVENUE, by Point and Branch, Fiscal Year
ended March 31, 1964**

Point and Branch	Fees	Samples Sold	Other Revenue (a)	Total
	\$	\$	\$	\$
Winnipeg				
Executive	—	—	190.71	190.71
Statistics	58,784.27 (a)	—	21.52	58,805.79
Appeal Tribunal	3,069.00	—	—	3,069.00
Research Laboratory	—	—	338.22	338.22
Inspection	381,707.95	6,221.41	6,631.86	394,561.22
Weighing	19,969.17	—	1,808.54	21,777.71
Churchill				
Inspection	70,992.23	—	—	70,992.23
Weighing	35,582.79	—	—	35,582.79
Keewatin				
Inspection	1,539.68	—	1,369.84	2,909.52
Weighing	3,637.84	—	1,656.74	5,294.58
Saskatoon				
Inspection	27,060.83	612.27	5.73	27,678.83
Weighing	13,619.87	—	7.80	13,627.67
Moose Jaw				
Inspection	9,420.55	222.32	—	9,642.87
Weighing	5,045.23	—	1,057.38	6,102.61

**Table H-2—ACCRUED REVENUE, by Point and Branch, Fiscal Year
ended March 31, 1964—Concluded**

Point and Branch	Fees	Samples Sold	Other Revenue (a)	Total
	\$	\$	\$	\$
Medicine Hat				
Inspection	6,474.00	—	—	6,474.00
Weighing	11,593.00	—	1,312.84	12,905.84
Lethbridge				
Inspection	5,407.29	313.92	—	5,721.21
Weighing	845.00	—	—	845.00
Calgary				
Inspection	109,792.85	1,694.80	640.75	112,128.40
Weighing	20,901.44	—	2,923.41	23,824.85
Appeal Tribunal	—	—	—	—
Edmonton				
Inspection	136,130.13	1,694.57	787.87	138,612.57
Weighing	3,408.74	—	37.92	3,446.66
Appeal Tribunal	—	—	—	—
Vancouver				
Inspection	399,395.43	13,811.99	2,418.14	415,625.56
Weighing	298,666.00	—	4,369.26	303,035.26
Statistics	16,082.87	—	—	16,082.87
Victoria				
Inspection	16,261.46	316.73	596.42	17,174.61
Weighing	12,264.83	—	546.70	12,811.53
Prince Rupert				
Inspection	17,586.40	584.11	66.35	18,236.86
Weighing	13,422.04	—	11.90	13,433.94
Fort William				
Inspection	726,349.78	6,867.84	1,812.33	735,029.95
Weighing	546,508.91	—	2,633.19	549,142.10
Toronto				
Inspection	5,962.40	133.50	14.02	6,109.92
Weighing	—	—	—	—
Chatham				
Inspection	40,464.45	614.23	1,193.96	42,272.64
Montreal				
Inspection	17,570.69	534.70	6,091.39	24,196.78
Weighing	—	—	—	—
Statistics	11,437.79	—	—	11,437.79
Baie Comeau				
Inspection	4,208.71	—	1,843.97	6,052.68
Weighing	457.90	—	3,116.05	3,573.95
Totals	3,051,621.52	33,622.39	43,504.81	3,128,748.72

(a) Details in Table H-4.

Table H-3—Accrued Revenue and Net Expenditure, by Points and Branches, Fiscal Year ended March 31, 1964

	Inspection	Weighing		Appeal Tribunals		Statistics		Research Laboratory		Grain Standards Commit- tees		Adminis- tration		Executive, Salaries of Commis- sioners		Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
REVENUE																
Winnipeg	394,561.22	21,777.71	3,069.00	58,805.79	338.22	—	190.71	—	—	—	—	—	—	—	—	478,742.65
Churchill	70,992.23	35,582.79	—	—	—	—	—	—	—	—	—	—	—	—	—	106,575.02
Keewatin	2,909.52	5,294.58	—	—	—	—	—	—	—	—	—	—	—	—	—	8,204.10
Saskatoon	27,678.83	13,627.67	—	—	—	—	—	—	—	—	—	—	—	—	—	41,306.50
Moose Jaw	9,642.87	6,102.61	—	—	—	—	—	—	—	—	—	—	—	—	—	15,745.48
Regina	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medicine Hat	6,474.00	12,905.84	—	—	—	—	—	—	—	—	—	—	—	—	—	19,379.84
Lethbridge	5,721.21	845.00	—	—	—	—	—	—	—	—	—	—	—	—	—	6,566.21
Calgary	112,128.40	23,824.85	—	—	—	—	—	—	—	—	—	—	—	—	—	135,953.25
Edmonton	138,612.57	3,446.66	—	—	—	—	—	—	—	—	—	—	—	—	—	142,059.23
Vancouver	415,625.56	303,035.26	—	16,082.87	—	—	—	—	—	—	—	—	—	—	—	734,743.69
Victoria	17,174.61	12,811.53	—	—	—	—	—	—	—	—	—	—	—	—	—	29,986.14
Prince Rupert	18,236.86	13,433.94	—	—	—	—	—	—	—	—	—	—	—	—	—	31,670.80
Fort William	735,029.95	549,142.10	—	—	—	—	—	—	—	—	—	—	—	—	—	1,284,172.05
Toronto	6,109.92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6,109.92
Chatham	42,272.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	42,272.64
Ottawa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Montreal	24,196.78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35,634.57
Baie Comeau	6,052.68	3,573.95	—	—	—	—	—	—	—	—	—	—	—	—	—	9,626.63
Totals	2,033,419.85	1,005,404.49	3,069.00	86,326.45	338.22	—	190.71	—	—	—	—	—	—	—	—	3,128,748.72

Table H-3—Accrued Revenue and Net Expenditure, by Points and Branches, Fiscal Year ended March 31, 1964 —Concluded

	Inspection		Weighing		Appeal Tribunals		Statistics		Research Laboratory		Grain Standards Commit- tees		Adminis- tration		Executive, Salaries of Commis- sioners		Total	
	\$		\$		\$		\$		\$		\$		\$		\$		\$	
Winnipeg	691,732.01		59,855.16		9,881.02		223,991.38		409,654.33		3,209.60		117,081.67		45,666.60		1,561,071.77	
Churchill	12,862.76		11,487.74														24,350.50	
Keewatin	5,218.26		6,311.36										17,827.15				11,529.62	
Saskatoon	49,386.11		34,833.14														102,046.40	
Moose Jaw	16,368.66		20,648.70										17,450.11				37,017.36	
Regina																	17,450.11	
Medicine Hat	315.00		11,375.74														11,690.74	
Lethbridge	10,527.43		5,520.00														16,047.43	
Calgary	127,948.67		65,485.77														198,434.44	
Edmonton	128,987.68		19,734.74										18,454.93				167,177.35	
Vancouver	367,283.52		274,177.30				25,044.51										666,505.33	
Victoria	20,118.64		11,501.64														31,620.28	
Prince Rupert	19,401.22		15,425.29														34,826.51	
Fort William	1,024,076.40		850,275.77														1,874,352.17	
Toronto																	14,405.61	
Chatham	59,091.07																59,091.07	
Ottawa	19,027.71																19,027.71	
Montreal	240,983.90		11,480.47				21,327.50										273,791.87	
Baie Comeau	19,365.39																19,365.39	
Totals	2,827,100.04		1,398,112.82		9,881.02		270,363.39		409,654.33		3,209.60		170,813.86		45,666.60		5,134,801.66	

Table H-4—Summary of Operations by Branches, Fiscal Year ended March 31, 1964

	Inspection	Weighing	Appeal Tribunals	Statistics	Research Laboratory	Grain Standards Commit- tees	Adminis- tration	Executive, Salaries of Commis- sioners	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$
REVENUE									
Tees.....	1,976,324.83	985,922.76	3,069.00	86,304.93	—	—	—	—	3,051,621.52
Overtime.....	17,752.13	19,481.73	—	—	—	—	—	—	37,233.86
Express Charges.....	5,710.50	—	—	—	—	—	—	—	5,710.50
Samples Sold.....	33,622.39	—	—	—	—	—	—	—	33,622.39
Refund of Previous Year's Expenditure.....	10.00	—	—	21.52	338.22	—	190.71	—	538.93
Miscellaneous Revenue.....	—	—	—	—	—	—	—	—	21.52
Totals	2,033,419.85	1,005,404.49	3,069.00	86,326.45	338.22	—	190.71	—	3,128,748.72
EXPENDITURE									
Salaries.....	2,513,296.19	1,331,016.93	7,470.00	201,576.32	276,135.59	—	120,516.10	45,666.60	4,495,727.73
Rent.....	95,883.25	11,141.01	—	25,627.64	40,271.96	—	19,147.17	—	192,071.03
Travel.....	82,691.51	46,563.51	—	1,985.95	6,026.50	2,099.60	19,252.65	—	158,619.72
Purchase of Equipment.....	53,914.62	177.66	154.78	—	35,087.26	—	—	—	89,334.32
General Expenses.....	67,914.12	5,639.45	2,247.00	12,762.31	44,772.80	1,110.00	10,711.71	—	145,157.39
Printing, Stationery and Office Equipment.....	13,400.35	3,574.26	9.24	28,411.17	7,310.22	—	1,186.23	—	53,891.47
Totals	2,827,100.24	1,398,112.82	9,881.02	270,363.39	409,654.33	3,209.60	170,813.86	45,666.60	5,134,801.66



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CANADA

ANNUAL REPORT,

(OF THE)

Board of Grain Commissioners (for Canada)

/ FOR THE YEAR

1966

DEPARTMENT OF AGRICULTURE

OTTAWA, CANADA

Minister:

Hon. J. J. Greene, M.P.

Deputy Minister:

S. C. Barry

ROGER DUHAMEL, F.R.S.C.

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Winnipeg, Manitoba,
January 30, 1967.

The Honourable J. J. Greene, M.P.,
Minister of Agriculture,
Ottawa, Canada.

Sir, — We beg to submit herewith Report of the Board of Grain Commissioners for Canada for the year 1966 in compliance with Section 23 of the Canada Grain Act.

This report records information and statistics relating to grain handlings for the crop year August 1, 1965, to July 31, 1966, and expenditures and revenue for the fiscal year April 1, 1965, to March 31, 1966, and summarizes the major activities of the Board for the 1966 calendar year.

Grain Supplies and Disposition — Crop Year 1965-66

The 1965-66 crop year witnessed the attainment of several new grain handling records, with many other records closely approached, making this an outstanding year in the history of the grain trade. Country elevator shipments, bulk wheat exports, rapeseed exports, total bulk grain exports and overseas clearances ex Pacific Coast ports, St. Lawrence ports, Lakehead direct and Churchill, all exceeded previous high volumes.

An estimated 746.7 million bushels of wheat, oats, barley, rye, flaxseed and rapeseed were carried over into the 1965-66 crop season, with some one-third of this total representing on farm storage. The 1965 crop included 648.9 million bushels of wheat, 413.0 millions of oats, 214.6 millions of barley, 16.7 millions of rye, 29.3 millions of flaxseed and 22.6 millions of rapeseed. This production combined with the inward carryover provided a total available stock of approximately 2,100 million bushels of grain to meet our domestic requirements and export trade commitments — some 170 millions above the comparable year ago supply.

The combined 1965-66 consumption figure of 1,426.1 million bushels included 671.6 millions destined for our export markets and a further 754.5 millions utilized in Canada for feed, seed, human food and industrial use. As a result of this year's increased commercial disappearance year end stocks declined to 669.6 million bushels as at July 31, 1966.

Marketings

The 775.3 million bushels of wheat, oats, barley, rye, flaxseed and rapeseed delivered to the licensed elevator system during the 1965-66 crop year represented a total exceeded only by the record 1952-53 handlings (851.2 millions). All individual grains with the exception of barley reflect increases of varying degree over the previous ten year average figures as indicated by the following totals: wheat 573.5 (415.0), oats 52.3 (51.2), barley 94.3 (96.6), rye 12.4 (7.1), flaxseed 23.9 (17.0) and rapeseed 18.9 (6.7) millions. Primary marketings at western country elevators were 761.4 million bushels while interior terminals and mills handled a further 8.0 millions. Producers' deliveries of eastern grown grain of 5.8 million bushels, principally wheat, were approximately 3 millions less than last year's receipts.

Country Elevator Shipments

The furtherance of the six principal grains from country elevators reached an all-time high of 815.2 million bushels during the period under review — some 40 millions above the previous record established in 1963-64. Wheat remained the principal component of country loadings with ship-

ments totalling a record 625.5 million bushels. Handlings of the other major grains included 55.1 millions of oats, 84.7 millions of barley, 11.6 millions of rye, 22.3 millions of flaxseed and 16.0 million bushels of rapeseed. Lakehead terminals were the recorded destination for 484.4 million bushels — 59.4% — of the country elevator traffic while the 234.6 millions moved to the Pacific Coast represented 28.8% of the prairie grain flow. Churchill accounted for a further 23.9 million bushels (2.9%) with the balance — 72.3 millions (8.9%) moving to interior terminals, western mills, local points and the United States.

Terminal Handlings

Reports received from elevator licensees indicate that vessel shipments ex the Canadian Lakehead totalled 479.5 million bushels, all grains — a figure second only to the peak 1944-45 movement of 490.2 millions. Carlot outturns of 480.8 million bushels were also one of the heaviest on record. The inland Seaway ports of Fort William/Port Arthur cleared 25.9 million bushels of the major grains for direct overseas shipment — 4.3 millions greater than the previous 1964-65 high.

Overseas clearances of the six principal Canadian grains ex Pacific Coast ports — 234.7 million bushels — were some 9 millions in excess of the previous peak shipping flow witnessed during the 1963-64 crop year.

The movement of Canadian wheat via the northern port of Churchill amounted to an all-time high of 25.1 million bushels.

The volume of grain dried at terminal elevators during 1965-66 — 146.9 million bushels — represents an increase of some 90% over the previous year's figure and reflects the highest total recorded since the 1951-52 crop year. Fort William/Port Arthur elevators dried 120.2 million bushels, all grains, compared with the 1964-65 figure of 47.5 millions while the 24.7 millions and 1.5 millions dried by Pacific Coast and interior terminals respectively, indicate little change from year ago handlings.

Eastern Elevator Handlings

Primary shipments of Canadian wheat, oats, barley, rye, flaxseed and rapeseed from licensed Eastern elevators amounted to 468.4 million bushels during the 1965-66 crop year. The export grain market absorbed 342.6 million bushels of this total while Canadian domestic usage accounted for 125.8 millions.

St. Lawrence River ports continued to obtain the bulk of their Canadian grain unloads — 324.9 million bushels or approximately 90% — on a direct vessel basis ex Lakehead terminals. Maritime ports unloaded 43.3 million bushels, primarily railed ex Bay and Lake ports but including 6.6 millions by direct vessel ex Fort William/Port Arthur elevators.

A decrease of some 34 million bushels was evident in eastern elevator receipts of United States grain during 1965-66. These elevators received 100.7 million bushels of which 84.5 millions were re-exported — the smallest volume since 1961-62 — and a further 16.2 millions directed into Canadian domestic channels.

As previously mentioned, licensed eastern elevators moved 125.8 million bushels of Canadian grain into the domestic market. This total included 62.9 millions of wheat, 33.0 millions of oats, 25.8 millions of barley, 2.1 millions of rye, 2.0 millions of flaxseed and a small parcel of rapeseed.

Exports

Exports of Canadian wheat, oats, barley, rye, flaxseed and rapeseed amounted to a record 635.6 million bushels during the 1965-66 crop year. This figure reflects an increase of 15.6 millions over the previous high recorded in 1963-64 and is more than double long term 30-year average shipments of 315.4 million bushels. Bulk wheat clearances of 546.0 million bushels represent the heaviest movement on record for this grain as do the 13.6 millions of rapeseed exported. Shipments of the other principal grains, with the exception of flaxseed, while comparable to recent years, remain well below existing records as indicated by the following figures: oats 15.3 millions (77.6 millions in 1944-45), barley 33.7 millions (118.9 millions in 1952-53), rye 8.1 millions (16.8 millions in 1953-54), and flaxseed 18.9 millions (21.6 millions in 1956-57). Wheat flour clearances of 36.0 million bushels were well below the record 1946-47 total of 79.5 millions.

Domestic Usage

Canadian domestic utilization of the six principal grains for feed, seed, human food and industrial use amounted to 754.5 million bushels during the 1965-66 crop year. Consumption figures for each grain reflect increases over year ago totals as indicated by the following comparison: wheat 159.8 (148.7), oats 402.7 (391.7), barley 171.9 (163.6), rye 6.4 (6.1), flaxseed 6.6 (5.4) and rapeseed 7.1 (2.7) million bushels. Direct "on farms" usage accounted for the major portion of this year's disappearance with some 215 million bushels moving via the licensed system into domestic channels.

Carryover

Stocks of the six principal Canadian grains held either on farms or in licensed storage amounted to 669.6 million bushels as at July 31, 1966 — a decline of some 80 millions from the comparable 1965 figures. The substantial reduction in this year's total carryover figure is almost entirely attributable to reduced holdings of wheat as indicated by the following figures: wheat 420.1 (513.0), oats 127.2 (130.1), barley 97.8 (88.8), rye 10.6 (8.3), flaxseed 10.8 (7.1) and rapeseed 3.1 (1.3) million bushels. On farms storage accounted for approximately one third of this total indicating little change from the previous year's disposition pattern.

Licensing and Bonding

The total licensed storage capacity at August 1, 1966 amounted to 677,758,460 bushels. This represented an increase of 2.1 million bushels in capacity since August 1, 1965. The number of licences in effect for country, terminal, mill and Eastern elevators totalled 5,184 at the beginning of the crop year 1966-67 as compared with 5,247 a year ago. The bulk of this decrease occurred in the public country elevator system where the total number of licences issued totalled 5,080 at August 1, 1966 compared with 5,139 issued at the beginning of the previous crop year. Again, the only major change in the storage pattern took place in the public country elevator system, which increased 3.2 millions to 384.4 millions. Semi-public terminal elevator capacity declined 1.0 million. There was no change in private terminal capacity and minor decreases in mill and Eastern elevator totals.

In addition to the licensed elevators, there were also licensed at August 1, 1966, 13 track buyers, 15 commission merchants and one grain dealer.

Assistant Commissioners

Through its four Assistant Commissioners, the Board kept in close touch with the operation of licensed country elevators in the Western Division. During the year 1966, the Assistant Commissioners inspected 622 elevators in Manitoba, 725 in northern Saskatchewan, 718 in southern Saskatchewan, and 509 in Alberta, a total of 2574. This inspection included checks on scales, sieves, moisture meters and certain other equipment; deductions for shrinkage and Prairie Farm Assistance Act Levy, and posting of current Board Regulations applying to country elevators.

Official complaints originating from country points totalled 6 as compared with 10 in the previous year.

Disposition of complaints investigated was as follows:

	Manitoba	Saskatchewan	Alberta	Total
No grounds for complaint	1	2	1	4
Settlement effected	1	—	—	1
Not yet disposed of	—	—	1	1
Totals	2	2	2	6

The Assistant Commissioners received and handled numerous inquiries on various matters related to country elevator operations.

Prosecutions and Penalties

During 1966, on the request of the Board, the R.C.M.P. filed charges in Court in connection with three cases of alleged breaches of the Canada Grain Act and Canada Grain Regulations. A conviction was obtained in each case.

Penalties totalling \$26,600 were levied and collected by the Board in connection with breaches of a Board Order respecting carload shipments of high moisture grain.

Shortages and Overages, Country Elevators

The exceptionally high level of grain handlings that occurred during the crop year under review prevented companies from carrying out as extensive a weighover program as that undertaken during 1964-65. The results of these weighups conform largely to the percentage distribution evident in previous years.

Elevators Reporting	1965-66	1964-65
Shortages	407	523
Neither Overages nor Shortages	24	3
Overages of less than .25%	802	1,051
Overages of .25% to .50%	401	403
Overages over .50%	124	78
Total elevators weighed over	1,758	2,058

The Board reviewed the details of the weighups and other related records and when necessary, held discussions with company management. The Assistant Commissioners were given wider authority to deal directly with elevator agents and superintendents in cases where excessive overages or shortages had been reported.

Regulations

Amendments made to the Canada Grain Regulations during 1966 were as follows:

- (1) Revision of Section 77 which lists certain obligations imposed on licensees under the Canada Grain Act.
- (2) Minor revisions to Schedule A, "Fees of the Board."
- (3) Increase of one cent per bushel in maximum elevation charge at country elevators, effective August 1, 1966.
- (4) Increase of one cent per bushel in maximum elevation charges at terminal elevators, to become effective January 1, 1967.
- (5) Increase of \$2.50 per 1,000 bushels in maximum elevation charges at Eastern elevators, effective January 1, 1967.
- (6) Revision of maximum charge for sacking grain at Eastern elevators, effective January 1, 1967.

Committees on Grain Standards

The Board constituted Committees on Western and Eastern Grain Standards for the crop year 1966-67 as provided in Section 25 of the Canada Grain Act. Personnel of these Committees is listed in Appendix A.

A meeting of the Western Committee was held at Winnipeg on October 27, 1966. The members received numerous reports relating to quality of crops grown in the 1966 season, and to various other matters in connection with grading of grain, and also selected and settled standard samples and standard export samples for various grades of western grain.

The Eastern Committee met in Toronto on August 31, 1966, and in Montreal, on November 1, 1966, and established standard samples for grades of grain grown in Eastern Canada.

Both groups authorized continued use of previously selected standard samples in instances where suitable recent samples for established grades were not available.

Inspection of Grain — Report on 1966 Crops

In the spring of 1966, moisture conditions across the prairie provinces were generally good to excellent. An extremely severe winter was followed by very heavy late season snowfall and subnormal spring temperature that delayed field work and seeding in all but a few southern districts. Despite heavy rainfall from May 15 to May 20 that stopped all field work in Manitoba, and cool showery weather that delayed field operations in eastern Saskatchewan, seeding was virtually completed by the end of the first week in June. The early seeded crops emerged well, and over wide areas June showers stimulated germination of the late seeded crops. The growing season featured timely rains that brought relief to drought and near drought areas in central Alberta, and to crops that were deteriorating from extreme heat in southern and central districts of Saskatchewan and southwestern Manitoba. There was damage from hail in a number of districts, and twice during the growing season excessive rainfall caused serious flooding in the Red River Valley and interlake region of Manitoba. Near perfect harvest weather prevailed through most of September and October, permitting the

late crops to reach maturity, and much second growth to fill out. Varying degrees of frost occurred in many districts, but as crops were well advanced, severe damage occurred only in the most northerly areas. With the exception of northern Alberta virtually all areas stored crops dry and in good condition.

In wheat the main degrading factors are immaturity, smudge, a moderate degree of mildew, and light bran frost. Test weight per bushel is very high in both spring and amber durums.

Barley harvested early was of very high quality, but the later crops suffered from unusual weathering and staining during good weather prior to swathing. The main degrading factor is peeled and broken kernels, but percentage of plump kernels is on the average high, and the supply of malting quality barley is apparently adequate to satisfy trade demands. The new variety, Conquest, showed up exceptionally well in both yield and quality.

There should be ample supplies of milling quality oats as the crop is of generally good quality, with slightly above average test weight. Second growth green kernels are a common degrading factor, as are admixtures of other grains and some discoloration from weathering.

The rye crop is of average quality, containing only slightly more smudge damage than in 1965, less sprout damage and an average amount of ergot.

The basic quality of our oilseed crops is excellent, with the main degrading factor in all classes being admixtures of inseparable weed seeds, as a result of real difficulty experienced by farmers in controlling weed growth. In flaxseed, the most conspicuous wild seed that cannot be removed in commercial cleaning is "Lady's Thumb" or "Smartweed." In rapeseed and domestic mustard seed content of "wild mustard" is noticeably higher than in previous years causing degrading of numerous lots of otherwise high quality seed to off grades, "Rejected and Sample."

The dry pea crop is of excellent quality; again mainly Century variety, with some light adhered soil the only important factor in grades other than content of splits. Production is apparently down more than an estimated 6% and stocks will not be sufficient to satisfy demands.

Research Laboratory

The Laboratory maintained its continuing program on the assessment of the quality of Canadian cereal grains at various stages during the movement from the farm to the ultimate consumer. Quality data for the 1966 crop grains were presented to the meetings of both the Eastern and Western Committees on Grain Standards. Quality data were obtained on carlots of grain entering terminal elevators and on cargoes of grain exported from Canada. These data were published during the year in a series of three new-crop bulletins; in regular quarterly cargo bulletins, and in the Annual Report.

There is an ever-increasing demand for Laboratory scientific and technical services by other divisions of the Board. Services to the Grain Inspection Division include the supervision of moisture testing equipment, quality tests on grains dried in terminal elevators, quality tests on several parcels of domestic and export grains, chemical tests on grains suspected of treatment with mercurial fungicides, quality tests on oil seeds, and a variety of machine shop services. The Laboratory's drawing and photographic section provided a variety of services for all other divisions. Requests for advice and information, as well as Laboratory services were answered for

other government departments and agencies, for grain companies, mills and bakeries, and for several universities. The Laboratory's facilities were inspected by visitors from a number of countries.

Quality tests on plant breeders' varieties of hard red spring and amber durum wheats and barleys occupies an important place in the Laboratory work program. Three new durum wheat varieties are presently in the final stage of this testing program. Technical service visits to current and potential market areas, and visits to cereal laboratories, mills, bakeries, and government agencies in several countries were made by several members of the Laboratory's senior staff.

The Laboratory has maintained an active program of both basic and applied research. Some of the topics under investigation are: studies of wheat and flour proteins by the gel filtration technique; studies of the enzymes, alpha and beta amylase, in the developing wheat kernel; starch damage during milling and its effect on the subsequent performance of the flour; detailed studies of the Chorleywood and related continuous dough processing systems; studies of factors affecting cooking properties of pasta products; studies of amylase and proteolytic enzymes in barley and malt, and their involvement in "chill haze" in beer. Results of Laboratory research are presented in sixteen scientific or technical papers which were published or were in press during 1966. Some of these were presented by staff members as part of their support and active participation in the activities of scientific or technical societies such as the International Association for Cereal Chemistry, the American Association of Cereal Chemists, Association of Operative Millers, etc.

Appendix F provides a somewhat more detailed summary of Laboratory activities in 1966; a complete account is given in the Laboratory's 1966 Annual Report.

Study of Grain Handling and Grading

The study of the Canadian system of grading and handling grain being conducted by Mr. M. J. Conacher, former Chief Inspector of the Board, has made substantial progress during the year. The first stage of the study was devoted to a survey of the opinions of the buyers, and the soliciting of proposals for improving Canadian methods of quality control; this stage was completed early in 1966.

The second stage of the study comprised the holding of meetings of people in the grain industry in Canada to obtain their reactions to proposals that had been received, and to give them the opportunity to present their views in relation to these. The main functions in this regard were meetings held at Winnipeg, Vancouver, and Toronto; briefs were submitted by various organizations representing a broad cross section of interests in the Canadian grain industry, from the producer level through to domestic processors and exporters.

The third stage of the study got underway toward the end of the year. The Board established The Advisory Committee on Grain Handling and Grading, comprising representation of various facets of the industry, with the main representation being of companies and co-operatives who are engaged in the handling and marketing of grain within the licensed elevator system in Canada. That Committee has established a number of sub-committees to engage in studies of various subjects, to obtain information for use of the Committee in preparing recommendations for action by the Board; all sub-committees had reported some progress in their studies by the end of the year.

Weighing of Grain

The staff of the Board's Weighing Division provided usual weighing services at licensed elevators and investigated complaints relating to reports of excessive outturn shortages on carlot and cargo shipments. The Board's scale inspectors carried out periodic tests and inspections of scales at licensed terminal and Eastern elevators, and made special inspections when such were considered necessary.

Further detailed information in regard to the work of this Division is given in Appendix E.

Weighover of Stocks, Terminal and Eastern Elevators

In accordance with the provisions of Sections 139 and 140 of the Canada Grain Act, 27 terminal and 19 eastern elevators were weighed over during the 1965-66 crop year by members of the Board's Weighing and Inspection staffs.

Deferments into the following crop year were made at 10 terminal elevators at the Lakehead, 8 terminal elevators at other points, and at 12 eastern elevators. The Board found it necessary to grant these deferments to avoid delaying the handling and loading of grain required to meet export orders. However, it was possible to carry out 8 of these deferred weighovers before the end of December, 1966.

Tables C-12 to C-14 of Appendix C contain results of weighovers carried out in the 1965-66 crop year.

Entomological Investigations

Most of the terminals were visited at least once during 1966 and elevator sanitation was generally improved over the previous year. Canadian grain stocks were mainly free of any insect contamination; an occasional infestation of moths in the fabric of some of the terminals on the West Coast was quickly brought under control once detected. It was observed, however, that not all elevator operators are fully aware of the need for an up-to-date grain sanitation program. Steps are now being taken to set up training courses to remedy this situation.

During the strike of grain handlers in Eastern Canada in June, extra precautions were taken to see that no infestations were present in the elevators in the Port of Montreal, and the cargoes which had remained afloat during the strike were closely examined at unload when work resumed.

Infestation in American grain moving through Canadian terminals continued to be a matter of some concern. Discussions were held with representatives of some of the U.S. grain firms in an effort to correct the problem before the grain left American terminals.

There is an extreme range of climatic conditions during any one year in Canada. Due to the fact that a large percentage of the infestations in grain stored in country elevators occurs during the cooler parts of the year, the effectiveness of grain fumigants in current use was investigated with a view to assessing the level of insect mortality when the temperature of infested grain was below 65°F. Preliminary results indicate that some reassessment of fumigant usage is required. This work is continuing.

Surveys were conducted in country elevators in Eastern Canada which, although not under the jurisdiction of the Board of Grain Commissioners, do ship into the licensed eastern elevators. The result of the surveys indicates that climatic conditions are conducive to rapid insect development and close attention to insect control programs is essential in this region throughout the year.

In 1966 a total of 99 carlots of grain was found to be infested with insects at the time of unload compared to 65 in 1965, 32 in 1964, and 158 in 1963. Almost 75% of these infested shipments occurred in August, September and October in 1966, at a time when the last of the old crop would be moving to the terminals.

Improved liaison between the Board's entomologist and other departments and agencies has been maintained, and advisory work with private grain handlers and the milling trade was continued. During the year, Dr. Liscombe presented a paper as part of the Grain and Cereal Products Sanitation Conference sponsored by the Association of Operative Millers' Sanitation Committee of which he is the Canadian member.

Terminal and Eastern Complaints

During 1966, the Board directed the investigation of 52 complaints relating to reports of excessive outturn shortages on shipments to Eastern Canadian and U.S.A. points. With one exception, these shipments originated at Fort William and Port Arthur.

The complaints were disposed of as follows:

No cause of reported discrepancy found	45
Settlement effected	6
Not yet disposed of	1
Total	52

Complaints on Export Shipments

A total of 17 complaints relating to shipments to overseas destinations was dealt with by the Board and its officials in 1966. Of this number, 9 concerned outturn weights reported from overseas, and 8 referred to some aspect of the quality of grain cargoes.

Disposition was as follows:

	Quality	Weight
No cause of reported discrepancy found	—	9
No grounds for complaint	8	—
Totals	8	9

Statistics

Statistics relating to Canadian grain movement collected and compiled by the Board's Statistics Division are presented in Appendix C of this report.

Information Program

In June, 1966, the Board appeared before the House of Commons Standing Committee on Agriculture, Forestry and Rural Development to provide information on its operations.

The Board's mobile grain grading exhibit was on display at twelve agricultural fairs in Manitoba, Saskatchewan and Alberta, and at the site of the South Saskatchewan River Dam. This was the tenth and last summer tour of the exhibit.

Two of the Board's grain inspectors were in attendance at a series of eight Combine Adjustment Field Days arranged by a sector of the grain trade. The inspectors provided answers to many questions on the handling and grading of malting barley.

The Board's offices were visited by a number of officials of the Foreign Trade Service of the Department of Trade and Commerce, and by other individuals and groups from Overseas and the United States who wished to discuss matters related to the grain trade and obtain first-hand information about the functions and services of the Board. Other visitors during the year included groups of students and particularly, country elevator agents, for whom an information program was organized.

In addition to discussions with members and officials of the Board, arrangements were made for visitors to tour the Inspection Division, the Research Laboratory and other divisions as desired; also, to view the colour motion picture film, "Grain Handling in Canada." Special lecture sessions were provided for students enrolled in the Diploma Course in Agriculture at the University of Manitoba.

During the year, the Chief Commissioner and Mr. V. Martens, Assistant Secretary to the Board, travelled to Japan, Hong Kong and mainland China to hold discussions with Government officials and others in the grain trade; and Commissioner Shuttleworth accompanied by the Chief Grain Inspector, visited the United Kingdom.

Members of the Board and senior officials again accepted a number of invitations to address annual meetings of producer organizations and to discuss topics of current interest related to the Board's work.

Production of a new film to replace "Grain Handling in Canada" was commenced and revised editions of the Board's handbooks, "The Farmer and the Country Elevator," and "Sale and Handling of Grain through a Country Elevator" were prepared and distributed.

Canadian Government Elevators

Receipts of grain during the crop year 1965-66 at the Canadian Government Elevators operated by the Board at Moose Jaw, Saskatoon, Calgary, Edmonton, Lethbridge and Prince Rupert, were 23.2 million bushels, compared with 16.6 millions in the previous crop year. Total shipments were 26.0 millions, an increase of 9.5 million bushels over the corresponding figure for 1964-65.

In the fiscal year 1965-66 expenditures exceeded revenues by the amount of \$156,085.

Lake Freight Rates

On March 10, 1959, under the provisions of Section 5 of the Inland Water Freight Rates Act, the Board issued Order No. 21 which revoked Order No. 20 of September 28, 1954. This had the effect of cancelling maximum freight rates established by the Board in Order No. 20 for the carriage of grain from Fort William or Port Arthur to other specified ports in Eastern Canada.

The average rates charged during the 1966 season of navigation are given in Table C-11 of Appendix C.

Prairie Farm Assistance Act

Under the provisions of Section 11 of the Prairie Farm Assistance Act, the Board continued to collect, where applicable, the one per cent levy on grain purchased by licensees under the Canada Grain Act. During the crop year 1965-66, the amount collected was \$10,331,386.00, a decrease of \$122,707.00 from collections recorded for the previous crop year. Collections by the Board since the inception of the Act (August 1, 1939) to July 31, 1966, total \$174,228,902.00.

Organization and Personnel

There were no changes in senior personnel during the year.

As at December 31, 1966, the Board's staff totalled 853 as compared with 843 at the end of the previous year. The staff of the Canadian Government Elevators numbered 168, a decrease of 29 from the previous year.

A chart of the Board's organization, including details of staff location, follows this report.

Expenditure and Revenue

Total expenditure and accrued revenue of the Board exclusive of the Canadian Government Elevators, for the fiscal year 1965-66 compared with 1964-65 was as follows:

	1965-66	1964-65
Expenditure	\$5,558,034.11	\$5,146,914.21
Revenue	4,715,710.15	3,617,588.00

Expenditure for the nine months of the 1966-67 fiscal year to December 31, 1966, including statutory salaries of the Commissioners, totalled \$4,458,771.

Cash revenue for the same nine-month period amounted to \$4,630,864 as compared with \$2,981,771 in the previous year.

Attached hereto is a series of Appendices which outlines in greater detail the work of the Board's divisions.

Respectfully submitted,

Frank Hamilton,
Chief Commissioner

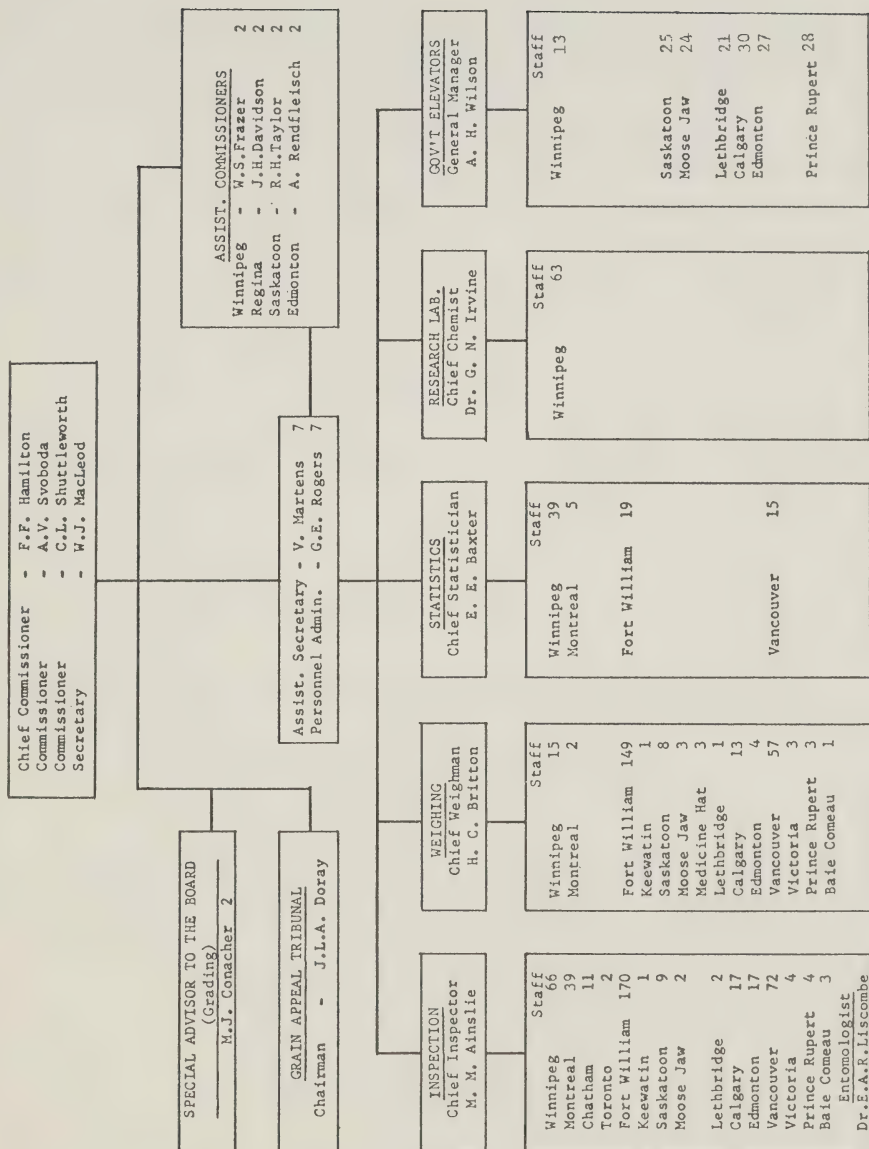
A. V. Svoboda,
Commissioner

C. L. Shuttleworth,
Commissioner

W. J. MacLeod,
Secretary

V. Martens,
Assistant Secretary

BOARD OF GRAIN COMMISSIONERS FOR CANADA



A P P E N D I X A

Committee on Western Grain Standards as at December 31, 1966

F. F. Hamilton, Chief Commissioner, Board of Grain Commissioners.
A. V. Svoboda, Commissioner, Board of Grain Commissioners.
C. L. Shuttleworth, Commissioner, Board of Grain Commissioners.
M. M. Ainslie, Chief Grain Inspector, Board of Grain Commissioners.
Dr. G. N. Irvine, Chief Chemist, Research Laboratory.
J. L. A. Doray, Chairman, Grain Appeal Tribunal, Winnipeg.
Dr. J. A. Anderson, Dominion Cerealists.

L. A. McCorquodale, representing the millers of wheat flour.

H. Anderson	}	Representing grain growers in Alberta.
R. J. Graham		
E. F. Seney		
K. Anderson		

J. H. Harrison	}	Representing grain growers in Saskatchewan.
D. L. Yonge		
T. E. Myers		
L. L. Gray		
N. W. Strelloff		

W. J. Parker	}	Representing grain growers in Manitoba.
P. A. McPhail		
Ray Mitchell		

G. Constable, representing grain growers in British Columbia.

L. Bell, representing Plant Products Division, Department of Agriculture.

Committee on Eastern Grain Standards as at December 31, 1966

F. F. Hamilton, Chief Commissioner, Board of Grain Commissioners.
A. V. Svoboda, Commissioner, Board of Grain Commissioners.
C. L. Shuttleworth, Commissioner, Board of Grain Commissioners.
M. M. Ainslie, Chief Grain Inspector, Board of Grain Commissioners.

W. G. Thomson, representing Montreal Board of Trade.

C. F. Bowker, representing Toronto Board of Trade.

C. Gordon McAuley, representing exporters of grain.

F. H. Dunsford	}	Representing millers of wheat in the Eastern Division.
C. L. Rogers		

J. R. Heaney	}	Representing grain growers in Ontario.
N. M. Marshall		

G. C. Nichols, representing growers of corn.

P. Blouin, Additional.

A. Bowman, Additional.

A P P E N D I X B

Grain Appeal Tribunals

Winnipeg

J. L. A. Doray (Chairman)
J. E. G. Hasell
J. F. Lazenby
Wm. E. McLeod
G. I. Rocan
E. A. Sangster
R. W. Close
C. E. Rippin
G. A. Turner
N. Kawka (Secretary)

Toronto

A. D. Clark
A. R. Cooper
A. C. Gillespie
J. R. Heaney
J. Jervis
S. M. Lockington
W. E. Vincent
D. C. Kay, Jr. (Secretary)

Montreal

G. T. Killeen, (Chairman)
P. Blouin
R. Strauss

Miss L. Campbell (Secretary)

For information on Appeals of Carlot Inspections refer to Appendix D, Table D-6.

APPENDIX C

Statistics Division

E. E. BAXTER, *Director*

(A) *Statistics*

The Canada Grain Act, in Section 15 (Subsection 16), empowers the Board to require from all Licensees those records and reports of stocks and handlings deemed necessary for effective supervision and control. From these returns the Division compiles and publishes basic statistics relating to the storage and movement of grain within the Canadian elevator system. It prepares audit statements of the operations of all terminal and eastern elevators, verifies the insurance carried on grain stocks and handles the record details relating to the amounts collected as the 1% levy under the Prairie Farm Assistance Act. It supplies for review by the Board a detailed analysis of all grain handlings and co-operates with other Board offices in the maintenance of detailed records of principal operations.

(B) *Licensing*

The Canada Grain Act establishes the terms under which any elevator shall be licensed by the Board for the receipt or discharge of any western grain. The Act also specifies the conditions by which grain dealers, track buyers or grain commission merchants must be licensed in order to engage in contracts dealing with western grain by grade name. Such elevator and dealer's licenses are issued by the Board through the licensing section of the Statistics Division. This office also supervises the implementation of Section 79-3 by which all such licensees must be secured by bond or otherwise for the performance of all obligations imposed upon them by the Act.

(C) *Registration*

Section 127 of the Canada Grain Act requires the operators or managers of public terminal, semi-public terminal and eastern elevators to issue warehouse receipts or transfer receipts for all grain taken into store. Sections 36 and 37 of the Canada Grain Regulations, made by the Board under the provisions of Section 15 (22) of the Canada Grain Act, require that all such warehouse receipts or transfer receipts be registered with the Board as to grade and quantity at the time of issue, and that these warehouse receipts or transfer receipts be surrendered to the Board for registration for cancellation when the grain which they represent has been shipped out.

Introductory Comment

The functions set out above are administered through the Division's central office in Winnipeg and sub-offices in Montreal, Fort William and Vancouver. The operations of the Vancouver and Fort William offices also include the records and documents function required by the Board's Inspection and Weighing Divisions at these points.

The feasibility study conducted by the Division in co-operation with the Management Services Unit of the Department during 1965 resulted in the acquisition of a low range computer. This equipment has been utilized in the provision of expanded statistical services to the Board and to accommodate records and documents operations on behalf of the Canadian Government Elevator system. This represented the initial step in a planned program of records maintenance and data communication designed to facilitate grain documentation and control procedures. A further study has been

initiated to determine the cost advantages of a telecommunication system that would incorporate the direct electronic transfer of input data from the Fort William sub-office to the Division's computer in Winnipeg.

Officers of the Division collaborated with a special joint committee comprised of representatives of operating grain companies and the Canadian Wheat Board in the study and preliminary testing of new accounting techniques relative to country elevator grain transactions. This was further to the work of this committee originally designed to study all phases and interrelationships in the accounting procedures and interchange of documents within the western grain trade.

(A) *Statistics*

The Division continued to serve as the principal source of Canadian grain storage and handling statistics, both in the release of regular bulletins and in the preparation of special reports and studies for governmental and trade offices. Regular continuing service in both statistics and records was provided for other Divisions of the Board and special analytical studies were prepared on request for the senior officers of these Divisions and for the information of the Board.

The Division continued to work in direct cooperation with the Agriculture Division of the Dominion Bureau of Statistics and with the Canadian Wheat Board as a primary source of Canadian grain statistics. The office supplied both agencies with regular and periodic reports, studies in answer to special requests, and, in the case of the Bureau, with the primary material for the joint publication "The Grain Trade of Canada" and auxiliary material for other related grain publications. Basic Canadian grain handling statistics were supplied to the Secretariat of the International Wheat Council, the Commonwealth Economic Committee and the Cereal Section of the Food and Agriculture Organization of the United Nations at Rome. Particularly close liaison was maintained with the Production and Marketing Branch of the U.S. Department of Agriculture in the interchange of grain statistics and related studies.

Pursuant to the provision of the Inland Water Freight Rates Act, shippers filed with the office copies of vessel charter confirmations covering all lake grain cargoes shipped from Fort William — Port Arthur to eastern Canadian ports. The charters covered some 1,025 grain cargoes carried in the Canadian coasting trade during the 1966 season from the first grain shipment on April 3 to the final loading on December 19. A summary statement of the average rates prevailing on these cargoes over the 1966 season appears in the tables appended to this report.

Audit examinations were conducted in connection with the weighup of 1,758 country elevators. The records and statements prepared in connection with the grain audits at terminal and eastern elevators, under provision of Sections 139 and 140 of the Canada Grain Act are summarized in tables included in the Appendix to this report. Additional studies in both of these areas were carried out by the Division to assist the Board in its review of these audits and to guide the Inspection and Weighing Divisions in their operational control work.

The Division continued its responsibility relative to Section 102 of the Canada Grain Act through the careful scrutiny of all insurance coverage maintained on Canadian grain stocks in licensed positions. Preliminary studies were continued relative to the possible modification of insurance and licence bond procedures as required under Section 79 (3) of the Canada Grain Act and Section 102.

(B) Licensing

As at December 1, 1965 the close of the initial period of the 1965-66 crop year, 5,260 licences were in force, issued to 74 firms and individuals. Included in these were 31 licences granted to Track Buyers, Commission Merchants and Grain Dealers.

During the course of the crop year 1965-66, a total of 81 licences were cancelled. By type of licence these cancellations comprised 78 public country elevators, 1 semi-public, 1 mill and 1 Commission Merchant. With respect to the public country elevator licences, 29 elevators became annexes to existing facilities at the shipping point, 12 elevators were dismantled, 8 elevators were sold, to be removed from the site, 2 elevators were unfit for grain storage, 1 elevator was moved to a new location, 2 elevators were no longer used for grain storage and 1 elevator was destroyed by fire and not re-built. In addition, 23 elevators on abandoned railway lines cancelled their licences when empty of grain, as required by Board ruling. At the close of the 1965-66 crop season there were no "railway abandoned" public country elevator licences in force.

Seven public country elevator licences were placed under suspension during the crop year 1965-66. Six of these were reinstated during the year and the remaining licence was later cancelled.

As at August 1, 1966 there were 5,184 elevator licences in force, representing a total storage capacity of 677,758,460 bushels. Broken down by provinces, this total was comprised as follows: Manitoba 59.4, Saskatchewan 219.8, Alberta 139.7, British Columbia 27.3, Ontario 164.9, Quebec 59.5 and the Maritime 7.2 million bushels. By class of licence the storage total was made up of 384.5 million bushels country elevator, 12.5 mill elevator, 150.3 semi-public terminal, 8.1 private terminal and 122.4 million bushels eastern elevators. The overall increase in storage capacity from the position at August 1, 1965 amounted to 2.1 million bushels. An increase of 3.2 million in the public country elevator and a decrease of 1.0 million in semi-public elevator storage reflected this change from year ago licensed storage totals. There was no change in private terminal capacity and only slight variance in mill and eastern elevator totals.

Guarantee bonds in the amount of \$32,142,985.00, executed by 14 approved surety companies, were deposited with the Board, as security under Section 79 of the Canada Grain Act, to cover operations of licensees during the crop year 1965-66. Negotiable Government bonds in the amount of \$1,000.00 were held in lieu of the usual form of surety bond.

(C) Registration

The regional offices of the Statistics Division located at Montreal, Que., Winnipeg, Man. and Vancouver, B.C. continued to provide registration service throughout the crop year 1965-66 for the licensees of 40 semi-public terminal elevators located in the Western Division of Canada and for licensees of 32 elevators at various points throughout the Eastern Division. This service was provided to carry out the registration, or the recording thereof, of all terminal and Eastern warehouse receipts and transfer receipts as issued by licensees under the provisions of Section 127 of the Canada Grain Act, to cover all grain taken into store in such elevators. Service was also provided to obtain the surrender of and carry out the registration for cancellation of all such documents when the grain which they represented had been shipped out. Service was also provided for the registration of splits, consolidations, reissue or adjustment of warehouse receipts to facilitate documentation to cover treatment of the grain while in store or for sales or

shipment of the grain on its way to domestic or overseas markets. A constant scrutiny was maintained over all operations to see that they were in accord with the provisions of the Canada Grain Act and Canada Grain Regulations, while further controls were carried out on behalf of the Canadian Wheat Board.

The volume of grain documented through the terminal and eastern elevator system throughout Canada, as determined by warehouse receipt registration and registration for cancellation, table C—19, reflects increases of 153.3 million and 150.5 million bushels respectively for all grains over similar handlings for the previous year in the Western Division, while increases of 227.7 million and 234.0 million bushels respectively were recorded in comparison with the ten year average. In the Eastern Division, increases of 84.1 million and 144.7 million bushels respectively for all grains are noted as compared to the previous year's handlings, with increases of 158.3 million and 178.0 million bushels respectively also recorded over that of the ten year average. The very large increase in the volume of handlings was reflected in the work of registration of documentation handled at all three service offices, each having experienced peak work loads throughout the year. Large quantities of tough and damp grain were received by terminals in the Western Division to be treated by artificial or natural drying in order to reduce the moisture content of the grain to normal levels to prevent spoilage. Handlings of this type of grain, for the Lakehead group of elevators in itself, show that 79.7 million, as compared to 28.4 million bushels for the previous year, were required to be artificially dried, while a further 40.5 million bushels as compared to 19.0 million bushels for the previous year, were naturally dried during the same period. In view of the very large volume of grain that had to be artificially dried and consequent large volume of documentation that would be required to cover such operations, the Board ordered a variation to the provisions of the Canada Grain Regulation governing drying of grain to provide for documentation of such operations to be handled on a bulk basis, rather than an individual car basis in the case of wheat, with adjustment on an optional car or bulk basis for drying of coarse grains. This procedure proved to be of such value in speeding up the work of documentation of these drying operations that its provision was carried into the following crop year. Amendments to work procedures were required in the Winnipeg service office to accommodate records and returns produced by data processing by one of the large Pool organizations. Further amendments in procedure were required in the closing months of the crop year to accommodate records, returns and complete documentation produced by data processing for the system of elevators operated by the Canadian Government Elevators at Prince Rupert, B.C. and five interior locations. Documentation and records for all these elevators are now being channeled through the Winnipeg office.

This year marked the first time that the fees charged for registration service had been increased since its inception in 1912. Fees were increased, effective August 1, 1965, from 4 cents per thousand bushels to 6 cents per thousand bushels, for both registration and registration for cancellation of warehouse receipts in the Western Division and from 1 cent per thousand bushels to 2 cents per thousand bushels for similar service in the Eastern Division. Total fees collected for the crop year 1965-66 amounted to \$116,083.74, as compared to \$58,631.07 collected for the crop year 1964-65, reflecting both the increased volume of documentation of handlings and the increase in fees charged for registration service.

Table C-1—Supply and Disposition of Canadian Grain, Crop Year 1965-66

	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed
	bu.	bu.	bu.	bu.	bu.	bu.
Supply						
Carry-over July 31, 1965.....	513,024,073	130,120,562	88,776,413	8,301,805	7,141,165	1,317,646
Production in 1965.....	648,917,000	414,957,000	214,555,000	16,695,000	29,254,000	22,600,000
Total Supply.....	1,161,941,073	545,077,562	303,331,413	24,996,805	36,395,165	23,917,646
Disposition						
Exported Overseas.....	580,409,949 ¹	14,127,681	29,015,618	6,474,706	18,935,830	13,625,869
Exported to U.S.A.....	1,616,903 ²	1,124,816	4,704,437	1,575,308	—	—
Consumed in Canada ³	159,791,913	402,662,092	171,858,820	6,379,903	6,618,034	7,143,434
Total Disposition.....	741,818,765	417,914,589	205,578,875	14,429,917	25,553,864	20,769,303
Carry-Over (July 31, 1966)						
On Farms (Estimated).....	100,000,000	91,000,000	33,000,000	2,400,000	1,900,000	164,000
In Country, Private Terminal and Mill Elevators.....	188,952,745	20,968,976	45,904,163	2,977,904	3,403,288	1,172,184
In Semi-Public Terminal Elevators.....	51,269,177	8,266,898	12,934,394	3,306,942	3,883,521	1,552,483
In Store and Afloat to Eastern Elevators.....	48,230,369	4,544,060	4,237,267	804,871	920,800	—
In Eastern Flour Mills.....	2,618,080	741,784	—	—	—	—
In Transit by Rail—Eastern and Western Division.....	29,051,937	1,641,255	1,676,714	725,323	733,692	259,636
In Store and in Transit to the U.S.A.....	—	—	—	351,848	—	—
Total in Store July 31, 1966.	420,122,308	127,162,973	97,752,538	10,566,888	10,841,301	3,148,303

¹Includes 35,157,764 bushels of wheat flour.

²Includes 881,235 bushels of wheat flour.

³Includes the following quantities subsequently exported in processed form:

Seed Wheat.....	794,827 bushels
Rolled Oats and Oatmeal.....	401,464 bushels
Barley Malt and Pot and Pearl Barley.....	4,308,539 bushels
Linseed Oil.....	569,652 bushels

**Table C-2—Production and Producers' Marketings in Western Canada,
by Provinces, Crop Year 1965-66**

	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed
	bu.	bu.	bu.	bu.	bu.	bu.
Production (DBS Estimate)						
Manitoba.....	79,000,000	74,000,000	22,000,000	3,400,000	16,200,000	2,400,000
Saskatchewan.....	400,000,000	94,000,000	65,000,000	7,300,000	7,300,000	10,700,000
Alberta and British Columbia.....	155,600,000	107,000,000	119,500,000	4,651,000	4,935,000	9,500,000
Totals.....	634,600,000	275,000,000	206,500,000	15,351,000	28,435,000	22,600,000
Producers' Marketings						
(a) At Country Elevators						
Manitoba.....	68,660,505	21,735,374	13,033,372	2,558,192	13,871,160	1,833,607
Saskatchewan.....	364,263,770	19,284,076	38,793,350	6,616,713	5,695,109	7,269,212
Alberta.....	131,874,922	10,097,872	41,553,473	2,831,706	3,732,569	7,653,603
Totals.....	564,799,197	51,117,322	93,380,195	12,006,611	23,298,838	16,756,422
(b) At Interior Semi-Public Terminals						
Manitoba.....	42,235	26,708	25,620	_____	_____	_____
Saskatchewan.....	_____	_____	_____	_____	_____	815
Alberta.....	8,166	_____	_____	_____	_____	_____
Totals.....	50,401	26,708	25,620	_____	_____	815
(c) At Interior Private and Mill Elevators						
Manitoba.....	240,418	170,517	35,452	_____	120,287	172,245
Saskatchewan.....	2,551,821	213,978	125,640	_____	31,992	1,273,012
Alberta.....	1,655,727	164,191	303,274	58,623	237,686	572,761
Totals.....	4,447,966	548,686	464,366	58,623	389,965	2,018,018
(d) Loaded over Platforms						
Manitoba.....	15,193	20,834	2,384	_____	_____	_____
Saskatchewan.....	_____	_____	_____	_____	_____	_____
Alberta.....	50,107	1,925	12,944	_____	_____	_____
Totals.....	65,300	22,759	15,328	_____	_____	_____
Total Producers' Marketings						
Manitoba.....	68,958,351	21,953,433	13,096,828	2,558,192	13,991,447	2,005,852
Saskatchewan.....	366,815,591	19,498,054	38,918,990	6,616,713	5,727,101	8,543,039
Alberta.....	133,588,922	10,263,988	41,869,691	2,890,329	3,970,255	8,226,364
Totals.....	569,362,864	51,715,475	93,885,509	12,065,234	23,688,803	18,775,255

Table C-3—Receipts and Shipments of Canadian Grain at Terminal Elevators, Crop Year 1965-66

	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed
	bu.	bu.	bu.	bu.	bu.	bu.
Fort William-Port Arthur						
Receipts.....	359,197,158	40,558,088	56,987,604	7,227,607	15,230,352	1,552,887
Shipments.....	372,521,235	41,153,618	54,550,217	6,195,598	14,072,686	1,307,153
Vancouver-New Westminster						
Receipts.....	164,663,048	8,103,132	16,014,731	3,811,778	6,897,491	12,644,286
Shipments.....	160,451,740	9,058,567	15,373,059	3,749,583	6,476,901	12,089,975
Victoria						
Receipts.....	11,510,206	1,971	—	—	594	—
Shipments.....	11,077,846	51,823	7,614	—	—	—
Prince Rupert						
Receipts.....	16,900,227	822	—	—	—	—
Shipments.....	17,104,214	90,409	—	—	—	—
Churchill						
Receipts.....	24,731,688	—	—	—	87	—
Shipments.....	25,077,496	57,000	—	—	—	—
Transcona						
Receipts.....	47,724	28,304	25,621	—	—	—
Shipments.....	881,231	106,627	37,673	—	—	—
Calgary						
Receipts.....	1,362,695	6,011	838,894	21,939	42,790	272,832
Shipments.....	2,106,870	14,084	924,313	47,725	46,119	272,832
Edmonton						
Receipts.....	339,409	6,390	399,610	4,156	30,847	950,791
Shipments.....	778,499	21,846	731,904	4,156	32,540	955,768
Lethbridge						
Receipts.....	507,779	—	—	—	—	—
Shipments.....	1,100,356	—	—	—	—	—
Moose Jaw						
Receipts.....	714,551	—	2,322	—	—	—
Shipments.....	241,385	—	2,322	—	—	—
Saskatoon						
Receipts.....	703,451	—	270	—	198	89,850
Shipments.....	1,293,715	—	—	—	—	270,113
Total Receipts.....	580,677,936	48,704,718	74,269,052	11,065,480	22,202,359	15,510,646
Total Shipments.....	592,634,586	50,553,974	71,627,102	9,997,062	20,628,246	14,895,841

Table C-4—Shipments of Foreign Grain from Canadian Elevators into Canadian Consumer Channels, Crop Year 1965-66

From	United States Corn	United States Soybeans
	bu.	bu.
Eastern Elevators.....	13,674,157	2,555,542
Fort William-Port Arthur Terminals.....	—	—
Interior Terminals.....	—	—
Interior Private and Mill Elevators.....	—	—
Pacific Coast Terminals.....	—	—

Table C-5—Primary Receipts and Shipments at Eastern Elevators, Crop Year 1965-66

	Receipts	Shipments
	bu.	bu.
Canadian Grain		
Wheat.....	367,260,958	389,610,221
Oats.....	35,765,478	34,525,738
Barley.....	36,311,564	35,090,856
Rye.....	3,532,286	3,431,283
Flaxseed.....	5,965,219	5,680,250
Corn.....	3,735,022	3,570,959
Soybeans.....	3,644,027	3,513,567
Buckwheat.....	59,765	62,590
Peas.....	104,269	104,269
Rapeseed.....	196,514	196,514
Sample Grain (lbs.).....	—	763,390
United States Grain		
Wheat.....	11,955,851	10,654,523
Oats.....	879,329	879,504
Barley.....	4,748,188	4,924,611
Rye.....	830,540	787,047
Corn.....	63,533,308	64,213,689
Soybeans.....	18,799,645	19,233,106
Sorghum.....	149,196	—

Table C-6—Supply and Disposition of Canadian Grain in United States Positions, Crop Year 1965-66

	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed
	bu.	bu.	bu.	bu.	bu.	bu.
Supply						
In Store and in Transit U.S.A.	—	—	—	373,846	—	—
Receipts Direct from Canada	735,668	1,124,816	4,704,437	1,553,310	—	—
Total Supply	735,668	1,124,816	4,704,437	1,927,156	—	—
Disposition						
Exported.....	—	—	—	—	—	—
Returned to Canada.....	—	—	—	—	—	—
Used Domestically.....	735,668	1,124,816	4,704,437	1,575,308	—	—
Total Disposition	735,668	1,124,816	4,704,437	1,575,308	—	—
In Store and in Transit July 31, 1966.....	—	—	—	351,848	—	—

Table C-7—Exports of Canadian Wheat, by Seaboard Sectors, by Months, Crop Year 1955-66

	Via Canadian Pacific Seaboard Ports	Via Canadian Lawrence St. Ports	Via Canadian Atlantic Seaboard Ports	Via Churchill	Via Port William- Port Arthur Direct	United States ¹ Imports	Total Wheat All	Wheat Flour ²	Total Wheat and Wheat Flour
	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.
1955									
August-----	8,569,296	22,734,811	456,843	10,622,126	994,193	—	43,377,269	1,937,357	45,314,626
September-----	16,502,603	36,289,740	1,881,705	8,711,215	1,062,025	—	64,447,288	2,755,197	67,202,485
October-----	15,363,215	42,302,184	1,371,445	4,958,155	522,066	—	64,517,065	2,659,511	67,176,576
November-----	16,797,345	36,907,739	951,271	—	996,107	—	55,652,462	3,848,052	59,500,514
December-----	12,839,492	16,147,211	4,214,374	—	—	—	33,201,077	2,541,732	35,742,809
1956									
January-----	14,053,210	579	9,428,861	—	—	—	23,482,650	5,277,787	28,760,437
February-----	15,605,576	1,498	7,894,541	—	—	—	23,501,615	3,660,919	27,162,534
March-----	21,497,481	1,196,769	9,700,480	—	—	—	32,394,730	2,884,699	35,279,429
April-----	16,876,562	20,066,362	851,205	—	112,000	—	37,794,129	3,437,152	41,231,281
May-----	15,749,013	27,970,999	524,533	—	44,356,545	—	44,356,545	3,450,709	47,807,254
June-----	21,454,167	37,792,948	576,901	—	421,258	—	60,245,274	1,584,902	61,830,176
July-----	13,092,764	46,409,397	931,320	786,000	1,062,600	735,668	63,017,749	2,000,982	65,018,731
Total Crop Year 1955-66 -----	188,400,724	287,820,237	38,783,479	25,077,496	5,170,249	735,668	545,987,853	36,038,999	582,026,852
Total Crop Year 1964-65 -----	155,097,434	151,527,449	33,946,505	22,060,294	4,107,980	—	366,739,662	31,542,359³	398,282,021
5-Year Average 1960-61 to 1964-65 -----	148,121,049	156,670,549	32,355,804	20,968,417	8,096,807	1,240,300	367,452,926	36,270,568	403,723,494

¹Compiled from returns of Canadian elevator licensees and shippers and advice from American grain correspondents.²Canadian Customs returns converted to bushels—unadjusted for time lag.³Revised—adjusted to remove effect of time lag in reports made by the Customs.

Table C-8—Overseas Exports of Canadian Grain, by Seaboard Sectors, by Grades, Crop Year 1965-66

Grades	Via Canadian Pacific Seaboard Ports	Via Canadian ¹ St. Lawrence Ports	Via Canadian Atlantic Seaboard Ports	Via Churchill	Via Fort William- Port Arthur Direct	Total
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat						
No. 1 Manitoba Northern....	2,763,741	5,371,949	189,407	811,038	191,080	9,327,215
No. 2 Manitoba Northern....	41,632,772	53,950,589	14,680,294	15,993,839	2,864,603	129,122,097
No. 3 Manitoba Northern....	56,483,755	89,069,926	15,789,860	5,966,593	726,113	168,036,247
No. 4 Manitoba Northern....	61,773,789	90,627,436	6,345,399	2,267,417	40,731	161,054,772
Number 5.....	21,014,119	20,032,944	—	—	827,582	41,874,645
Other Red Spring.....	353,438	17,427	—	38,609	—	409,474
Garnet.....	168,382	—	—	—	—	168,382
Alberta Winter.....	1,031,547	—	—	—	—	1,031,547
Eastern.....	—	206,781	179,369	—	—	386,150
No. 1 C.W. Amber Durum ..	—	145,413	—	—	—	145,413
No. 2 C.W. Amber Durum ..	173,600	7,407,069	139,223	—	111,254	7,831,146
No. 3 C.W. Amber Durum ..	1,482,730	12,227,490	1,377,010	—	185,155	15,272,385
Ex. No. 4 C.W. Amber Durum.....	386,350	5,096,851	46,823	—	90,288	5,620,312
No. 4 C.W. Amber Durum ..	1,136,501	3,661,208	36,094	—	—	4,833,803
Other C.W. Amber Durum ..	—	5,154	—	—	133,443	138,597
Totals.....	188,400,724	287,820,237	38,783,479	25,077,496	5,170,249	545,252,185
Oats						
No. 3 C.W.....	—	497,698	65,838	—	1,147,594	1,711,130
Ex. No. 1 Feed.....	1,561,082	—	—	—	489,854	2,050,936
No. 1 Feed.....	6,553,726	549,751	—	—	2,852,020	9,955,497
Mixed Feed.....	344,235	—	—	—	65,883	410,118
Totals.....	8,459,043	1,047,449	65,838	—	4,555,351	14,127,681
Barley						
No. 3 C.W. Six Row.....	698,132	—	—	—	862,663	1,560,795
No. 1 Feed.....	12,706,656	7,464,965	—	—	579,034	20,750,655
No. 2 Feed.....	1,874,273	1,460,086	—	—	2,531,022	5,865,381
Other Western.....	—	—	—	—	838,787	838,787
Totals.....	15,279,061	8,925,051	—	—	4,811,506	29,015,618
Rye						
No. 2 C.W.....	2,675,356	44,886	—	—	1,154,707	3,874,949
No. 3 C.W.....	992,048	1,280,320	—	—	327,389	2,599,757
Totals.....	3,667,404	1,325,206	—	—	1,482,096	6,474,706
Flaxseed						
No. 1 C.W.....	6,514,727	2,240,615	1,357,942	—	8,711,613	18,824,897
No. 2 C.W.....	—	60,296	—	—	—	60,296
No. 3 C.W.....	50,637	—	—	—	—	50,637
Totals.....	6,565,364	2,300,911	1,357,942	—	8,711,613	18,935,830
Rapeseed						
No. 1 Canada.....	12,029,456	100,689	—	—	1,112,600	13,242,745
No. 2 Canada.....	278,844	47,832	—	—	23,520	350,196
No. 3 Canada.....	32,928	—	—	—	—	32,928
Totals.....	12,341,228	148,521	—	—	1,136,120	13,625,869

¹Includes clearances of wheat and rye direct overseas from Kingston and Prescott.

Table C-9—Overseas Exports of Canadian Grain, by Ports, Crop Year 1965-66

Loaded at	Wheat (All varieties)	Oats	Barley	Rye	Flaxseed	Rapeseed	Grand Total All Grains
	bu.	bu.	bu.	bu.	bu.	bu.	bu.
Vancouver-New Westminster	160,248,186	8,459,043	15,279,061	3,667,404	6,565,364	12,341,228	206,560,286
Victoria	11,049,957	—	—	—	—	—	11,049,957
Prince Rupert	17,102,581	—	—	—	—	—	17,102,581
Churchill	25,077,496	—	—	—	—	—	25,077,496
Fort William-Port Arthur	5,170,249	4,555,351	4,811,506	1,482,096	8,711,613	1,136,120	25,866,935
Kingston	323,960	—	—	293,782	—	—	617,742
Prescott	659,866	—	—	10,000	—	—	669,866
Montreal	107,727,550	616,123	6,988,363	972,561	1,964,811	100,689	118,370,097
Sorel	51,027,921	431,326	—	48,863	79,940	47,832	51,635,882
Three Rivers	30,366,792	—	168,000	—	256,160	—	30,790,952
Quebec	22,525,808	—	1,768,688	—	—	—	24,294,496
Baie Comeau	75,188,340	—	—	—	—	—	75,188,340
Saint John	1,922,201	—	—	—	—	—	1,922,201
West Saint John	21,687,725	65,838	—	—	867,150	—	22,620,713
Halifax	15,173,553	—	—	—	490,792	—	15,664,345
Total—Canadian Ports	545,252,185	14,127,681	29,015,618	6,474,706	18,935,830	13,625,869	627,431,889
U.S.A. Ports	—	—	—	—	—	—	—
Total to Overseas	545,252,185	14,127,681	29,015,618	6,474,706	18,935,830	13,625,869	627,431,889
Wheat Flour ¹	36,038,999	—	—	—	—	—	36,038,999
U.S.A. Imports ²	735,668	1,124,816	4,704,437	1,575,308	—	—	8,140,229
Grand Totals	582,026,852	15,252,497	33,720,055	8,050,014	18,935,830	13,625,869	671,611,117

¹Canadian Customs returns—converted to bushels.

²Compiled from returns of Canadian elevator licensees and shippers and advice from American grain correspondents.

Table C-10—Tough and Damp Grain Dried, by Storage Position, Crop Year 1965-66

	Artificial Drying			Natural Drying	Total
	Tough	Damp	Tough and Damp		
	bu.	bu.	bu.	bu.	bu.
Lakehead					
Wheat-----	73,927,693	1,726,365	75,654,058	32,905,010	108,559,068
Durum-----	169,122	37,110	206,232	827,419	1,033,651
Oats-----	13,267	24,074	37,341	1,704,703	1,742,044
Barley-----	300,514	440,431	740,945	3,549,273	4,290,218
Rye-----	10,124	8,207	18,331	558,864	577,195
Flaxseed-----	2,761,662	177,065	2,938,727	912,022	3,850,749
Mixed Grain-----	9	2,679	2,688	349	3,037
Buckwheat-----	72,203	28,801	101,004	1,547	102,551
Rapeseed-----	-----	-----	-----	10,624	10,624
Totals-----	77,254,594	2,444,732	79,699,326	40,469,811	120,169,137
Pacific Coast					
Wheat-----	7,700,527	48,123	7,748,650	14,131,240	21,879,890
Durum-----	50,930	-----	50,930	84,081	135,011
Oats-----	-----	-----	-----	76,179	76,179
Barley-----	765,644	16,622	782,266	1,229,788	2,012,054
Rye-----	-----	-----	-----	249,652	249,652
Flaxseed-----	93,800	7,769	101,569	198,622	300,191
Rapeseed-----	-----	1,628	1,628	66,524	68,152
Totals-----	8,610,901	74,142	8,685,043	16,036,086	24,721,129
Interiors					
Wheat-----	837,407	519	837,926	83,897	921,823
Durum-----	-----	-----	-----	1,863	1,863
Barley-----	583,221	8,000	591,221	5,934	597,155
Flaxseed-----	5,135	-----	5,135	-----	5,135
Mixed Grain-----	85	-----	85	-----	85
Rapeseed-----	-----	-----	-----	16,772	16,772
Mustard Seed-----	-----	-----	-----	752	752
Totals-----	1,425,848	8,519	1,434,367	109,218	1,543,585
Churchill					
Wheat-----	-----	-----	-----	475,154	475,154
Totals, All Positions-----	87,291,343	2,527,393	89,818,736	57,090,269	146,909,005

**Table C-11—Weighted Average Lake Freight Rates on Canadian Grain from
Fort William-Port Arthur, Season of Navigation 1966**

Port of Discharge	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed
			(cents per bushel)			
Georgian Bay Ports, Goderich, Sarnia and Walkerville.....	4.572	4.397	4.643	5.078	—	—
Port Colborne.....	5.695	6.0	5.767	5.5	—	—
Toronto.....	6.363	6.25	7.971	6.75	7.25	—
Kingston (Direct).....	6.75	6.75	7.058	6.75	—	—
Prescott (Direct).....	7.445	6.984	7.355	8.12	—	—
Montreal (Direct).....	10.970	10.235	11.128	11.842	12.453	13.766
Montreal via Bay Port.....	12.5	—	—	—	—	—
Montreal via Port Colborne.....	12.308	—	—	—	—	—
Montreal via Kingston.....	12.044	—	—	—	—	—
Montreal via Prescott.....	11.22	—	—	—	—	—
Montreal via Toronto.....	12.5	—	—	—	—	—
Sorel (Direct).....	11.125	10.0	—	—	—	14.0
Sorel via Prescott.....	12.5	—	—	—	—	—
Three Rivers (Direct).....	10.898	10.5	12.068	—	11.5	—
Quebec (Direct).....	10.737	10.213	11.541	—	—	—
Baie Comeau (Direct).....	10.614	—	10.5	—	10.603	—
Halifax.....	15.972	12.282	14.985	—	—	—
Other Maritime Points.....	21.387	15.819	16.539	—	—	—
Buffalo.....	9.0	—	8.929	8.425	—	—
Chicago.....	—	—	—	7.155	—	—
Duluth-Superior.....	—	—	6.138	—	—	—
Manitowoc.....	—	—	7.434	—	—	—
Milwaukee.....	—	—	7.162	—	—	—

Note—Rates originally quoted in United States funds have been converted to Canadian currency at the prevailing rates of exchange.

**Table C-12—Excesses and Deficiencies in Specified Grades of Wheat Disclosed by Weighovers of Grain Stored in
SEMI-PUBLIC TERMINAL ELEVATORS, Crop Year 1965-66**

Date of Weighover	Licensee	EXCESS						DEFICIENCY					
		No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 2 Canada Western Garnet	No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 2 Canada Western Garnet
	Fort William-Port Arthur												
Dec. 22-31, 1965	Federal Grain Ltd.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.
Dec. 17-24, 1965	"Northwestern" "Stewart"	—	—	—	—	—	—	—	486.9	3,195.0	5,794.8	—	—
		—	—	—	—	—	—	—	691.5	2,141.2	2,653.0	—	—
Oct. 8, 1965	Manitoba Pool Elevators Elevator No. 2	—	—	—	—	—	—	—	17.5	304.8	752.9	—	—
Dec. 10-15, 1965	McCabe Grain Co. Ltd.	—	—	—	—	—	—	—	401.5	4,260.0	1,603.4	—	—
Dec. 20-28, 1965	National Grain Co. Ltd.	—	—	—	—	—	—	—	219.4	9,359.9	15,380.3	—	—
Dec. 20-27, 1965	Paterson & Sons Ltd., N.M.	—	—	—	—	—	—	—	234.7	2,268.9	3,381.4	—	—
	Saskatchewan Wheat Pool												
Dec. 21-28, 1965	Elevator No. 4	—	—	—	—	—	—	—	9,224.0	44,791.9	5,653.6	—	—
Jan. 6-13, 1966	Elevator No. 5	—	—	—	—	—	—	—	1,956.5	20,005.5	5,693.0	—	—
Jan. 3-10, 1966	Elevator No. 6	—	—	—	—	—	—	—	2,721.9	33,400.3	19,308.0	—	—
Dec. 16-21, 1965	Searle Grain Co. Ltd. Elevator "A"	—	2,605.3	—	—	—	—	—	—	26,896.6	7,351.4	—	4.7
Dec. 14-23, 1965	Superior Elevator Co. Ltd.	—	899.3	—	—	—	—	—	—	3,187.4	1,228.2	—	—
Dec. 9-14, 1965	United Grain Growers Ltd.	—	—	—	—	—	—	—	—	4,695.8	258.8	—	—
Dec. 21-31, 1965	"Thunder Bay" Elevator "A"	—	—	—	—	—	—	—	55.8	3,114.2	4,649.0	—	—

**Table C-12—Excesses and Deficiencies in Specified Grades of Wheat Disclosed by Weighovers of Grain Stored in
SEMI-PUBLIC TERMINAL Elevators, Crop Year 1965-66—Concluded**

Date of Weighover	Licensee	EXCESS					DEFICIENCY						
		No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 2 Canada Western Garnet	No. 1 Manitoba Hard	No. 1 Manitoba Northern	No. 2 Manitoba Northern	No. 3 Manitoba Northern	No. 1 Canada Western Garnet	No. 2 Canada Western Garnet
July 7-14, 1966.....	Victoria, B.C. Victoria Elevator Ltd.....	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.
Dec. 15-17, 1965.....	Calgary, Alta. Canadian Government Elevator.....	—	—	17,971.3	2,426.4	—	—	—	3,416.3	6.9	6,889.8	—	—
Dec. 20-30, 1965.....	Edmonton, Alta. Canadian Government Elevator.....	—	—	—	—	—	—	—	39.3	181.7	519.7	—	—
April 25, 1966.....	Lethbridge, Alta. Canadian Government Elevator.....	—	—	3,834.8	1,713.1	—	—	—	163.4	—	—	—	—
Nov. 3, 1965.....	Moose Jaw, Sask. Canadian Government Elevator.....	—	—	—	913.1	—	—	—	—	93.8	—	—	—
Nov. 1-2, 1965.....	Saskatoon, Sask. Canadian Government Elevator.....	—	—	—	—	—	—	—	—	10.3	291.9	—	—
Oct. 20-25, 1965.....	Churchill, Man. National Harbours Board.....	—	7.9	34,586.4	—	—	—	—	—	—	11,331.8	—	—

Table C-13—Excesses and Deficiencies in Specified Grades of Wheat Disclosed by Weighovers of Grain Stored in PRIVATE TERMINAL Elevators, Crop Year 1965-66

	Excess	Deficiency
No. 1 Manitoba Hard.....	—	—
No. 1 Manitoba Northern.....	—	—
No. 2 Manitoba Northern.....	—	—
No. 3 Manitoba Northern.....	—	—
No. 1 Canada Western Garnet.....	—	—
No. 2 Canada Western Garnet.....	—	—

No wheat of the above grades was handled or in store in the following elevators:

Date of Weighover	Elevator Company	Location
August 5, 1965.....	Canada Malting Co. Ltd.....	Winnipeg, Manitoba
August 5, 1965.....	Dominion Malting Co. Ltd.....	Winnipeg, Manitoba
November 24, 1965.....	Canada Malting Co. Ltd.....	Port Arthur, Ontario
November 25, 1965.....	National Grain Co. Ltd.....	Fort William, Ontario
July 31, 1966.....	Canada Malting Co. Ltd.....	Calgary, Alberta

**Table C-14—Overages and Shortages Disclosed by Weighovers of Canada Western
and Foreign Grain Stored in Eastern Elevators, Crop Year 1965-66**

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1966			bu.	bu.
Jan. 20-26	Montreal National Harbours Board No. 4	Canada Western Wheat Canada Western Oats Canada Western Barley U.S.A. Wheat	— — — —	40,428.8 1,289.7 1,202.2 1,296.3
Jan. 20- Feb. 11	National Harbours Board No. 5	Canada Western Wheat Canada Western Oats Canada Western Barley Canada Western Rye Canada Western Flax Canada Western Grain U.S.A. Oats U.S.A. Corn U.S.A. Soybeans	— — — — — — — — —	12,420.7 924.3 1,416.5 42.7 86.8 * 2,884 111.6 1,212.2 33.5
Jan. 27- Feb. 11	National Harbours Board No. 3	Canada Western Wheat Canada Western Oats Canada Western Barley Canada Western Rye Canada Western Flax Canada Western Screenings U.S.A. Wheat U.S.A. Soybeans	— — 4,502.0 — 808.3 — — —	2,607.3 1,283.3 — 534.5 — *28,330 201.1 675.7
Feb. 2-17	National Harbours Board No. 1 and No. 2	Canada Western Wheat Canada Western Oats Canada Western Barley Canada Western Rye Canada Western Flax Canada Western Buckwheat Canada Western Rapeseed Canada Western Peas Canada Western Grain Canada Western Screenings U.S.A. Wheat U.S.A. Barley U.S.A. Soybeans	— 2,061.1 — — — — — — * 390 — — — — —	1,767.2 — 1,774.0 349.7 4.3 19.9 62.9 41.5 — *23,320 482.4 98.1 461.5
Feb. 7-23	Baie Comeau Cargill Grain Co. Ltd.	Canada Western Wheat Canada Western Barley Canada Western Flax Canada Western Grain French Barley	— — — *40,790 —	37,683.2 55.5 95.6 — 314.6
Feb. 14-17	Kingston Canada Steamship Lines Ltd.	Canada Western Wheat Canada Western Oats Canada Western Barley U.S.A. Oats U.S.A. Barley U.S.A. Soybeans	— — — — — —	5,275.4 206.2 97.5 28.1 29.3 22.0

*Pounds.

**Table C-14—Overages and Shortages Disclosed by Weighovers of Canada Western
and Foreign Grain Stored in Eastern Elevators, Crop Year 1965-66—Continued**

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1966			bu.	bu.
Feb. 14-23	Three Rivers Three Rivers Elevators Ltd.-----	Canada Western Wheat----- Canada Western Oats----- Canada Western Barley----- Canada Western Rye----- Canada Western Flax----- Canada Western Buckwheat----- Australian Barley-----	----- ----- ----- ----- ----- ----- -----	33,011.2 1,472.8 1,227.9 313.2 675.2 119.0 172.9
Feb. 21- Mar. 1	Prescott National Harbours Board-----	Canada Western Wheat----- Canada Western Oats----- Canada Western Barley----- Canada Western Rye----- Canada Western Flax----- Canada Western Screenings----- U.S.A. Wheat----- U.S.A. Barley-----	----- 179.5 ----- ----- ----- ----- ----- -----	1,529.6 ----- 3,442.6 379.1 39.9 *4,700 170.3 181.3
Feb. 24- Mar. 4	Montreal Federee Elevators Ltd.	Canada Western Wheat----- Canada Western Oats----- Canada Western Barley----- U.S.A. Corn-----	----- ----- 161.3 -----	1,680.1 393.3 ----- 178.3
Mar. 3-11	Port Colborne Maple Leaf Mills Ltd.-	Canada Western Wheat----- Canada Western Rye-----	----- -----	6,136.2 28.2
Mar. 3-14	Robin Hood Flour Mills Ltd.-----	Canada Western Wheat-----	-----	5,957.0
Mar. 14-18	Walkerville Hiram Walker & Sons Corp. Ltd.-----	Canada Western Wheat----- Canada Western Rye----- U.S.A. Corn-----	----- ----- -----	858.7 17,336.4 1,088.6
Mar. 16-17	Midland Canadian National Rly. Co.-----	Canada Western Wheat-----	-----	7,180.9
Mar. 21- April 6	Goderich Goderich Elevator & Transit Co. Ltd.-----	Canada Western Wheat----- Canada Western Oats----- Canada Western Barley----- Canada Western Rye----- Canada Western Screenings-----	----- ----- ----- ----- -----	14,690.9 2,113.5 3,150.2 1,100.4 *173,730
April 11-12	Port McNicoll Marathon Realty Co. Ltd.-----	Canada Western Wheat-----	-----	5,598.4
April 11-21	Sarnia Maple Leaf Mills Ltd.-	Canada Western Wheat----- Canada Western Oats----- Canada Western Barley----- Canada Western Rye----- U.S.A. Corn-----	----- ----- ----- ----- -----	7,713.4 545.9 152.0 226.0 344.1

*Pounds.

Table C-14—Overages and Shortages Disclosed by Weighovers of Canada Western and Foreign Grain Stored in Eastern Elevators, Crop Year 1965-66—Concluded

Date of Weighover	Licensee	Kind of Grain	Overage	Shortage
1966			bu.	bu.
April 13-15	Midland Midland Simcoe Elevator Co. Ltd.---	Canada Western Wheat----- Canada Western Oats----- Canada Western Barley----- Canada Western Screenings-----	----- ----- ----- -----	4,163.2 569.7 578.0 * 430
April 15	Renown Investments Ltd.-----	Canada Western Wheat-----	-----	766.8
May 2	Peterborough Quaker Oats Co. of Canada Ltd.-----	Canada Western Wheat-----	-----	165.1

*Pounds.

Table C-15—Amounts Collected under the One Per Cent Levy, Prairie Farm Assistance Act, Crop Year 1965-66

Province	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed	Total
	\$	\$	\$	\$	\$	\$	\$
Manitoba.....	827,398.16	101,676.10	94,675.46	22,029.66	215,801.72	31,603.46	1,293,184.56
Saskatchewan.....	5,518,001.74	108,312.22	333,398.83	70,924.34	142,580.49	142,110.22	6,315,327.84
*Alberta.....	1,967,203.30	57,784.53	401,911.28	31,244.22	95,170.52	169,560.07	2,722,873.92
Totals.....	8,312,603.20	267,772.85	829,985.57	124,198.22	453,552.73	343,273.75	10,331,386.32
*Includes Peace River area in B.C.							
Penalties on late filing of returns.....							---
Total collections August 1st, 1965 to July 31, 1966.....							10,331,386.32

Table C-16—Licences in Force and Storage Capacity as at August 1, 1966 and a Year Ago

Kind of Licence	Licences in Force August 1		Licensed Storage Capacity August 1	
	1966	1965	1966	1965
Country Elevators-----	5,085	5,145	384,552,300	381,334,000
Terminal and Mill Elevators-----	68	70	170,840,860	172,010,360
Eastern Elevators-----	31	32	122,365,300	122,335,300
Track Buyers, Commission Merchants and Grain Dealers-----	29	32	†	†
Totals-----	5,213	5,279	677,758,460	675,679,660

†These licences do not cover grain storage facilities.

**Table C-17—Number and Kind of Licences Issued and Licensed Storage Capacity,
as at December 1st each year for the Past Five Years**

Kind of Licence	1966	1965	1964	1963	1962
	Number of Licences				
Public Country Elevator	5,064	5,121	5,163	5,183	5,214
Private Country Elevator	5	6	6	6	6
Mill Elevator	23	25	25	25	25
Semi-Public Terminal Elevator	39	40	40	40	40
Private Terminal Elevator	5	5	5	5	6
Eastern Elevator	31	32	32	32	31
Track Buyer	13	14	13	14	15
Commission Merchant	16	15	16	16	18
Grain Dealer	1	2	2	3	3
Totals	5,197	5,260	5,302	5,324	5,358
	Licensed Capacity				
	thousands of bushels				
Public Country Elevator	388,192	382,681	378,314	372,288	368,252
Private Country Elevator	140	172	172	172	157
Mill Elevator	10,770	12,650	12,815	12,815	12,791
Semi-Public Terminal Elevator	150,294	151,294	151,394	151,394	146,714
Private Terminal Elevator	8,067	8,067	8,067	8,067	8,217
Eastern Elevator	122,365	122,335	122,335	119,585	111,575
Totals	679,828	677,199	673,097	664,321	647,706

Table C-18—Licensed Elevators and Storage as at December 1, 1966

Kind of Elevator	Ontario	Mani- toba	Saskat- chewan	Alberta	British Colum- bia	Quebec and Mari- times	Totals
	Number of Elevators						
Public Country	2	650	2,794	1,596	22	—	5,064
Private Country	—	2	1	2	—	—	5
Mill	3	6	4	9	1	—	23
Semi-Public Terminal	24	1	2	3	9	—	39
Private Terminal	2	2	—	1	—	—	5
Eastern	17	—	—	—	—	14	31
Totals	48	661	2,801	1,611	32	14	5,167
	Storage Capacity						
	thousands of bushels						
Public Country	1,439	49,082	206,533	128,517	2,621	—	388,192
Private Country	—	35	25	80	—	—	140
Mill	1,480	2,069	3,231	3,972	18	—	10,770
Semi-Public Terminal	103,347	5,000	11,000	6,100	24,847	—	150,294
Private Terminal	2,974	3,603	—	1,490	—	—	8,067
Eastern	55,666	—	—	—	—	66,699	122,365
Totals	164,906	59,789	220,789	140,159	27,486	66,699	679,828

Table C-19—Warehouse Receipt Registrations for Primary and Transfer Receipts and Shipments at Semi-Public Terminal Elevators and Eastern Elevators, by Area and Grain, Crop Year 1965-66 and 10-Year Average

Area	Grain	Crop Year 1965-66		10-Year Average, 1955-56 to 1964-65	
		Registered	Registered for Cancellation	Registered	Registered for Cancellation
			thousands of bushels		
Western Division— Winnipeg, including Lakehead and Churchill	Wheat	385,082	398,764	234,602	233,423
	Oats	39,763	40,437	37,494	39,055
	Barley	49,649	47,840	53,805	53,860
	Flax	15,241	14,084	10,851	10,635
	Rye	7,228	6,196	5,609	5,639
	Mixed Grain	196	27	227	220
	Corn	—	—	1	1
	Others	1,780	1,533	296	310
Interior Elevators— Calgary, Edmonton, Lethbridge, Moose Jaw, Saskatoon and Transcona	Wheat	3,676	6,408	3,369	4,422
	Oats	41	143	286	308
	Barley	1,267	1,696	1,619	1,573
	Flax	74	79	188	187
	Rye	26	52	15	14
	Mixed Grain	4	10	3	23
	Corn	—	2	10	27
	Others	1,403	1,553	2,545	2,316
Vancouver and Prince Rupert Area	Wheat	193,143	188,736	128,033	128,205
	Oats	8,149	9,259	3,608	4,617
	Barley	16,074	15,454	25,173	24,994
	Flax	6,900	6,482	5,449	5,396
	Rye	3,823	3,753	928	904
	Mixed Grain	96	45	16	23
	Corn	—	—	2	13
	Others	13,647	13,159	5,453	5,582
Western Division All Points	Wheat	581,901	593,908	366,004	366,050
	Oats	47,953	49,839	41,388	43,980
	Barley	66,990	64,990	80,597	80,427
	Flax	22,215	20,645	16,488	16,218
	Rye	11,077	10,001	6,552	6,557
	Mixed Grain	296	82	246	266
	Corn	—	2	13	41
	Others	16,830	16,245	8,294	8,208
Totals—All Grains		747,262	755,712	519,582	521,747
Eastern Division—	Wheat	452,469	474,768	313,655	314,253
	Oats	37,294	36,055	37,134	37,199
	Barley	41,676	40,635	49,345	49,318
	Flax	6,342	6,057	16,134	16,119
	Rye	4,421	4,277	4,783	4,802
	Mixed Grain	—	15	366	378
	Corn	67,599	68,116	40,128	39,532
	Screenings	3,369	2,890	2,410	2,433
	Peas	104	104	135	135
	Soybeans	24,068	24,263	14,710	14,570
	Buckwheat	60	63	232	232
	Others	383	234	503	503
Totals—All Grains		637,785	657,477	479,535	479,474

APPENDIX D

Inspection Division

M. M. AINSLIE, *Chief Grain Inspector*

Under Section 32 of the Canada Grain Act, the Grain Inspection Branch in the Western Division establishes grades on carlots of grain on samples drawn during unloading by officials of the Inspection Division at the Lakehead, Pacific Coast, Churchill, Winnipeg, Calgary, Edmonton, Moose Jaw, Saskatoon, Lethbridge, Medicine Hat and Keewatin. Also, all grain shipped from terminal and mill elevators is officially sampled and inspected. At the primary inspection points of Winnipeg, Calgary and Edmonton, at the request of shippers, samples placed in cars by country elevator agents are removed and graded, and carlots may be officially sampled by probing and inspected.

In the Eastern Division, sampling and grading service is provided on request at Chatham and Toronto for Eastern grown grain. At Montreal, Quebec, Sorel, Three Rivers, Baie Comeau, St. John and Halifax, grain loaded into vessels for export is sampled, inspected and certified.

Grades of all grain in store in all terminal and Eastern elevators weighed over during the crop year are verified by officials of the Inspection Division.

Under Sections 26, 28 and 31 of the Canada Grain Act, the Board holds the Chief Grain Inspector responsible for the collection of samples of grain of the current crop year's crops of western and eastern grain, and from such samples to prepare tentative standard and standard export samples of statutory and commercial grades for submission to the Committees on Grain Standards. The Inspection Division of the Board also handles the distribution of the standard and standard export samples.

Crop Conditions and Grades, 1965, Western Canada

In 1965 seeding operations were severely hampered by excessive rainfall but in general, growing season conditions were quite favourable with promise of a bumper crop. Extremely unfavourable weather conditions prevailed through a five-week period from August 23, during which swathed and standing crops suffered from persistent, intermittent heavy rains, varying amounts of snowfall, and some severe frost. Fair weather returned and became general toward the end of September, permitting all crops to be harvested, but in Manitoba and northern areas of Saskatchewan and Alberta, much of it was stored in tough and damp condition.

Arrested maturity, varying degrees of frost damage, weathering and mildew caused 42.3% of red spring shipments to grade No. 4 Manitoba Northern and lower. Only 1.5% of shipments graded No. 1 Manitoba Northern with a total of 57.7% grading No. 3 Manitoba Northern or better. Of all red spring shipments, 24.8% were tough or damp. Amber durumms were affected mainly by weathering and frost, and ergot content remained near the same level as the average of the previous two years. Of amber durum shipments, 75.2% graded Extra No. 4 Canada Western or better, including less than 1% of No. 1 Canada Western.

The quality of the barley crop was seriously affected by adverse weather at harvest time with the result that only 6,899 carlots graded into the Canada Western malting and pearling grades; 47.2% of barley shipments graded No. 1 Feed. Test weight of oats was high but weathering and mildew caused 41.9% of shipments to grade No. 1 Feed, while 29% of shipments

were in the milling grades No. 3 C.W. or higher. Rye quality was slightly below 1964 with 36.5% of shipments in grades No. 1 and No. 2 Canada Western and 44.5% No. 3 Canada Western.

Oil seeds were quite variable in quality. Flaxseed quality in most areas came through the late harvest weather better than expected and although 20.7% of inspections were off grade Tough or Damp, 75.5% graded No. 1 Canada Western. Rapeseed production in 1965 approximately doubled for the second consecutive year and quality was generally better than the 1964 crop. The difficulties experienced by producers in the control of weed growth in this crop and in domestic mustard seed were evident in higher dockage content of farmers' deliveries and in shipments degraded on account of inseparable admixtures.

There was a market shortage of dry peas partly due to a 22% drop in estimated production. The quality of the crop was excellent with ground tag and light weather damage the two most important factors in grades.

Crop Conditions and Grades, 1965, Eastern Canada

Although soil moisture conditions in Ontario were only slightly below normal in the spring, seeding was retarded by slow winter breakup, and followed by dry weather that made for slow and uneven germination. Drought and near drought conditions in some areas were not alleviated until July 2 and 3. Cool, rainy weather that extended through the last two weeks of July and into August was beneficial to late crops but slowed down the harvest of winter wheat and spring cereals. In Quebec, seeding was late due to cold humid weather, and in June hot dry weather resulted in a general drought condition, which was most severe in the western part of the province. General rains in early July enabled crops to recover well.

Of all carlots of Canada Eastern Winter Wheat, 75.8% were graded No. 1 or No. 2. Only 60 carlots of oats were officially inspected with No. 3 Canada Eastern the top grade and 50% grading No. 4 Canada Eastern due to weather damage, stain and some blotch. Barley carlot inspections were more than double that of the previous year with 70% grading into malting and pearling grades No. 3 Canada Eastern or better.

Of all carlots of Canada Eastern Corn inspected, 66% graded No. 1 and No. 2 and only 4.2% were assigned to off grades on account of high moisture content. About 73% of white pea beans graded No. 1 Canada Eastern, and two carlots were Extra No. 1 Canada Eastern. Slightly over 25% of all soybeans were assigned to off grades due to high moisture content, but the crop was generally of good quality with 1,419 carlots of a total of 2,091 grading No. 1, No. 2 and No. 3 Canada Yellow.

Samples Submitted for Grading

A total of 23,176 "Subject to Grade and Dockage" samples were inspected in the 1965-66 crop year as compared to 21,663 in 1964-65 and 15,059 in the previous year. There was a great increase in the number of rapeseed samples submitted due to the record crop harvested which was more than double that produced in 1964.

Farmers' Complaints and Inquiries on Carlot Shipments

In the 1965-66 crop year, 21 requests were received from producers to establish whether the identity of Special Bin grain had been preserved in handling through country elevators. In six instances it was established that the identity of the farmers' grain had not been preserved.

Preparation of Standard Samples

A total of 62 tentative standard and standard export samples were prepared for presentation to the Western Committee on Grain Standards, and from these on October 27, 1966, the committee established 40 as standard samples of statutory grades, 9 as standard samples of commercial grades, and 13 as standard export samples. Virtually all material collected for the preparation of tentative standard samples was obtained through close co-operation with country elevator licensees, by reviewing and selecting from samples submitted to the grain firms for advice as to grade. Nearly 1,000 two-bushel bags of grain were collected from all of the grain production area in western Canada.

At the first meeting of the Eastern Committee on Grain Standards held in Toronto on August 31, 1966, 17 samples of wheat, oats, barley and rye, were established as standard samples of statutory grades and four as standard samples of commercial grades. At the second meeting held in Montreal on November 1, 1966, the committee established 21 standard samples for statutory grades of corn, dry beans, soybeans, and domestic buckwheat.

Varietal Identification Projects

The work of the Inspection Division in assisting in the development of new varieties of cereal grains is continuing the same as in past years, with approximately 3,000 samples of new varieties examined this year. Reports on kernel characteristics and visual appearance of the varieties were made directly to the plant breeders at Agricultural Research Stations and universities across Canada who submitted the samples.

Inspection Division reports on varieties assist the plant breeders in screening out undesirable varieties in the early stages of their development. The desirable varieties are entered into more extensive tests and are repeatedly examined by the Inspection Division through these stages of testing. More detailed descriptions on kernel characteristics and grading suitability of the varieties are provided when they are in an advanced stage of development and entered into the co-operative test series. Reports on 79 new varieties of wheat and barley in the co-operative test series were completed and provided for the Associate Committee on Grain Research of the National Research Council which recommends the licensing of new varieties to the Minister.

In 1966 the Inspection Division continued its co-operation with other divisions of the Department and the Board, and to provide service to producers, producer organizations and commercial organizations within the grain business, by distinguishing varieties of wheat and barley by kernel characteristics for grading purposes and to assist in controlling the production of inferior and unlicensed varieties of these grains.

Staff Training

Staff training is assuming an ever increasing role of importance to Inspection Division operations. Programmed training starts immediately a person is appointed as a grain inspection assistant and is continued throughout his career as a grain inspector. Responsibilities for staff training were established at all staff levels and at all points and the organizational setup was completely reviewed.

An Assistant Chief Grain Inspector directs staff training within the Inspection Division and a senior staff training officer and his assistant at head office are responsible for the supervision of the overall program. At each point a senior inspector is assigned as training officer and is responsible for conducting an adequate local program.

In 1966, 10 inspectors received certificates of departmental proficiency. A total of 12 probationary grain inspection assistants were appointed and received training. Of the nine probationary grain inspection assistants who were required to qualify for their position, eight passed the departmental qualifying examinations. Twenty-four grain inspectors were certified as seed analysts and qualified to complete official seed analyses of samples of rapeseed and domestic mustard seed.

The training of grain inspectors to qualify as seed analysts has become an important part of the staff training program. Appreciable increases in some inseparable weed seeds in small oil seed crops could create serious grading and handling problems. A continuous program of instruction has been established to train staff to become qualified to do official analyses of samples, and subsequent re-qualifying examinations are conducted regularly to ensure that a high level of proficiency is maintained in this work.

Publications

Revised editions of the Canadian Grain Grading Guide and the Canadian Grain Inspectors' Manual were published and became effective August 1, 1966. The new issues contained numerous minor amendments and were printed for the first time in standard type.

Public Relations in Canada and Abroad

In 1966, the head office of the Inspection Division hosted more than 400 Canadians, including many grain producers and country elevator agents, line elevator and terminal management, agricultural students, and others. Addresses were delivered by the Chief Grain Inspector and the Assistant Chief Grain Inspectors at numerous public meetings, mainly of producers' organizations. Over 2,000 persons attended such meetings.

Throughout the year, 67 foreign visitors, representing 17 different countries, were received in the head office in Winnipeg. Most of those visitors were grain traders or foreign government representatives who also called on grain inspectors in charge of port area inspection laboratories. They were shown the physical handling of grain being received and shipped at terminal elevators and observed grain inspection operational procedures.

Late in June, the Chief Grain Inspector, accompanied Commissioner C. L. Shuttleworth, on a visit to the United Kingdom to discuss with traders and processors the quality of Canadian pea bean shipments. All U.K. processors and importers were called on and three canneries visited, where much useful information was obtained. These personal contacts have resulted in a better understanding of the processors' problems in a developing and expanding U.K. market for white pea beans.

Staff

During 1966 the number of personnel employed remained fairly constant. In December, Mr. R. A. Sellen was engaged as a technician to assist Dr. E. A. R. Liscombe, Board Entomologist, in an expanded program of investigations related to the origin and control of insect infestations in Canadian and foreign grain.

On promotion to supervising inspector rank, Mr. N. E. Day was transferred from Calgary to Winnipeg, and Mr. A. M. Harper from Lethbridge to Edmonton. Mr. H. Fast was transferred from Vancouver to Prince Rupert, B.C., and Mr. G. Symonds from Fort William, Ontario to Lethbridge, Alberta; both to assume duties as grain inspectors in charge of operations.

WESTERN DIVISION

Table D-1—Carlot Inspections by Points, Crop Year 1965-66, Compared with 1964-65

	1965-66	1964-65	1965-66	1964-65
			percent of total	
Fort William.....	242,571	189,750	59.0	58.1
Winnipeg.....	9,733	8,549	2.4	2.6
Churchill.....	12,725	11,187	3.1	3.4
Moose Jaw.....	2,653	2,626	.6	.9
Saskatoon.....	6,076	5,952	1.5	1.5
Calgary.....	5,380	4,636	1.3	1.4
Edmonton.....	1,595	2,359	.4	.7
Medicine Hat.....	2,697	1,470	.7	.5
Lethbridge.....	652	371	.1	.1
Prince Rupert.....	9,383	5,586	2.3	1.8
Vancouver.....	117,711	94,325	28.6	29.0
Totals.....	411,176	326,811	100.0	100.0

Table D-2—Carlot Inspections, Crop Year 1965-66

Grade	Carlots	Percentage	Percentage of Total Wheat Inspected
WHEAT			
1 Manitoba Northern.....	4,672	1.5	—
2 Manitoba Northern.....	70,914	23.0	—
3 Manitoba Northern.....	77,167	25.1	—
Tough 1 to 3 Manitoba Northern.....	24,864	8.1	—
4 Manitoba Northern.....	59,738	19.4	—
Tough 4 Manitoba Northern.....	38,116	12.4	—
4 Special.....	226	.1	—
No. 5.....	15,968	5.2	—
No. 6.....	679	.2	—
Feed.....	53	*	—
Garnet.....	20	*	—
Tough Others.....	13,412	4.3	—
Damp.....	1,012	.3	—
Smutty.....	11	*	—
Rejected.....	1,208	.4	—
Others Red Spring.....	19	*	—
Total Red Spring Wheat.....	308,079	100.0	94.4
1 Canada Western Amber Durum.....	64	.4	—
2 Canada Western Amber Durum.....	2,093	12.6	—
3 Canada Western Amber Durum.....	7,337	44.1	—
Extra 4 Canada Western Amber Durum.....	3,008	18.1	—
4 Canada Western Amber Durum.....	2,605	15.6	—
5 Canada Western Amber Durum.....	118	.7	—
6 Canada Western Amber Durum.....	1	*	—
Tough Durum.....	902	5.4	—
Others Durum.....	519	3.1	—
Total Amber Durum Wheat.....	16,647	100.0	5.1
Total Soft White Spring.....	268	—	.1
Total Mixed Wheat.....	193	—	.1
Total Alberta Winter Wheat.....	1,054	—	.3
Total All Wheats.....	326,241	—	100.0

Table D-2—Carlot Inspections, Crop Year 1965-66—Continued

Grade	Carlots	Percentage
OATS		
1 Canada Western	—	—
2 Canada Western	11	.1
Extra 3 Canada Western	136	.7
3 Canada Western	5,324	28.2
Extra 1 Feed	3,551	18.8
1 Feed	7,922	41.9
2 Feed	499	2.6
3 Feed	92	.5
Mixed Feed	27	.1
Tough	1,252	6.6
Damp	10	.1
Rejected	35	.2
Others	40	.2
Total Oats	18,899	100.0
BARLEY		
1 Canada Western Six-Row	2	*
2 Canada Western Six-Row	248	.7
3 Canada Western Six-Row	5,129	13.8
1 Canada Western Two-Row	3	*
2 Canada Western Two-Row	141	.4
3 Canada Western Two-Row	1,376	3.7
1 Feed	17,585	47.2
2 Feed	2,589	6.9
3 Feed	211	.6
Tough	9,646	25.9
Damp	255	.7
Rejected	51	.1
Others	17	*
Total Barley	37,253	100.0
RYE		
1 Canada Western	4	.1
2 Canada Western	2,079	36.4
3 Canada Western	2,540	44.5
4 Canada Western	100	1.8
Ergoty	171	3.0
Tough	807	14.1
Damp	4	.1
Rejected	2	*
Others	—	—
Total Rye	5,707	100.0
FLAXSEED		
1 Canada Western	9,553	75.5
2 Canada Western	365	3.0
3 Canada Western	79	.6
4 Canada Western	4	*
Tough	2,499	19.7
Damp	121	1.0
Rejected	28	.2
Others	9	*
Total Flaxseed	12,658	100.0

*Less than 0.05%

Table D-2—Carlot Inspections, Crop Year 1965-66—Concluded

Grade	Carlots	Percentage
Corn.....	35	—
Sunflower Seed.....	45	—
Mixed Grain.....	139	—
Screenings.....	518	—
Buckwheat.....	92	—
Peas.....	57	—
Rapeseed.....	8,809	—
Sample Grain.....	160	—
Mustard Seed.....	522	—
Condemned Grain.....	41	—
Grand Total.....	411,176	—

*Less than 0.05%

Table D-3—Carlots of Tough, Damp and Straight Grain Inspected, Crop Year 1965-66

Grain	Tough	Damp	Tough and Damp	Straight	Total
Wheat.....	77,294	1,012	78,306	247,935	326,241
Oats.....	1,252	10	1,262	17,637	18,899
Barley.....	9,646	255	9,901	27,352	37,253
Rye.....	807	4	811	4,896	5,707
Flaxseed.....	2,499	121	2,620	10,038	12,658
Totals.....	91,498	1,402	92,900	307,858	400,758
Others.....	—	—	—	—	10,418**
All Grains.....	—	—	—	—	411,176
	Percentage of Total				
Wheat.....	23.7	0.3	24.0	76.0	100.0
Oats.....	6.7	*	6.7	93.3	100.0
Barley.....	25.9	0.7	26.6	73.4	100.0
Rye.....	14.1	0.1	14.2	85.8	100.0
Flaxseed.....	19.7	1.0	20.7	79.3	100.0
Principal Grains.....	22.8	0.3	23.1	76.9	100.0
Others.....	—	—	—	—	100.0**

*Less than 0.05%

**Details not available.

Table D-4—Number of Two-Pound Samples "Subject to Grade and Dockage" Inspected, Crop Year 1965-66, Compared with Crop Year 1964-65

Point	1965-66	1964-65
	Number of Samples	
Winnipeg.....	12,605	11,893
Calgary.....	2,577	2,128
Edmonton.....	2,696	4,572
Moose Jaw.....	146	94
Saskatoon.....	713	587
Lethbridge.....	4,439	2,389
Totals.....	23,176	21,663

Table D-5—Carlots Re-Inspected, Crop Year 1965-66

Point	Inspected	Re-Inspected	Un-Changed	Grades Raised	Grades Lowered	Dockage Raised	Dockage Lowered
Fort William.....	242,571	15,247	13,491	1,662	60	1	33
Winnipeg.....	9,733	1,276	1,091	129	22	19	15
Churchill.....	12,725	625	537	87	—	1	—
Moose Jaw.....	2,653	161	126	25	9	1	—
Saskatoon.....	6,076	517	439	51	27	—	—
Calgary.....	5,380	415	352	48	15	—	—
Edmonton.....	1,595	99	90	9	—	—	—
Medicine Hat.....	2,697	162	137	19	6	—	—
Lethbridge.....	652	7	7	—	—	—	—
Prince Rupert.....	9,383	433	392	41	—	—	—
Vancouver.....	117,711	11,117	9,739	1,325	17	7	29
Totals.....	411,176	30,059	26,401	3,396	156	29	77
Percentage of Total Carlots.....	100.0	7.3	6.4	0.8	0.03	—	0.01
		Percentage of Re-Inspections					
Fort William.....	—	100.0	88.5	10.9	0.4	—	0.2
Winnipeg.....	—	100.0	85.5	10.1	1.7	1.5	1.2
Churchill.....	—	100.0	86.0	14.0	—	—	—
Moose Jaw.....	—	100.0	78.3	15.5	5.6	0.6	—
Saskatoon.....	—	100.0	84.9	9.9	5.2	—	—
Calgary.....	—	100.0	84.8	11.6	3.6	—	—
Edmonton.....	—	100.0	90.9	9.1	—	—	—
Medicine Hat.....	—	100.0	84.6	11.7	3.7	—	—
Lethbridge.....	—	100.0	100.0	—	—	—	—
Prince Rupert.....	—	100.0	90.5	9.5	—	—	—
Vancouver.....	—	100.0	87.6	11.9	0.1	0.1	0.3
Totals.....	—	100.0	87.8	11.3	0.5	0.1	0.3

Table D-6—Summary of Carlot Inspections Appealed, Crop Year 1965-66

Item	Carlots	Percentage	Carlots	Percentage
Left as Graded.....	606	94.4	—	—
Grades Raised.....	21	3.3	—	—
Grades Lowered.....	15	2.3	—	—
Totals.....	642	100.0	—	—
Total Carlots Inspected.....			411,176	100.0
Total Appeals.....			642	0.16
Total Grades Changed.....			36	0.01

Table D-7—Vessel Shipments Inspected, Crop Year 1965-66

Grain	Fort William and Port Arthur	Vancouver	Victoria	Prince Rupert	Churchill	Total
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat-----	371,120,875	160,248,186	11,049,957	17,102,580	24,291,496	583,813,094
Oats-----	38,708,883	8,459,043	—	—	57,000	47,224,926
Barley-----	48,624,413	15,279,061	—	—	—	63,903,474
Rye-----	6,219,310	3,667,404	—	—	—	9,886,714
Flaxseed-----	13,003,027	6,536,768	—	—	—	19,539,795
Buckwheat-----	101,845	54,211	—	—	—	156,056
*Sample Grain-----	—	—	—	—	—	—
*Screenings-----	3,277,676	267,613	—	—	162,190	3,707,479
*Rapeseed-----	1,332,943	12,369,823	—	—	—	13,702,766
*Mustard Seed-----	—	983,036	—	—	—	983,036
*Mustard Seed (U.S.A. Origin)-----	—	—	—	—	—	—
**Sunflower Seed-----	54,317	—	—	—	—	54,317
Totals-----	482,443,289	207,865,145	11,049,957	17,102,580	24,510,686	742,971,657

*In bushels of 50 lbs.

**In bushels of 30 lbs.

**Table D-8—Carlot Shipments Inspected, ex Terminal and Mill Elevators
Crop Year 1965-66**

Grain	Winnipeg	Fort William and Port Arthur	Calgary	Edmonton	Moose Jaw
Wheat.....	486	1,014	1,168	408	195
Oats.....	159	914	101	86	26
Barley.....	323	661	300	354	8
Flaxseed.....	—	730	17	25	11
Rye.....	1	15	58	2	—
Mixed Grain.....	18	—	7	5	17
Corn.....	—	—	—	—	—
Buckwheat.....	—	30	—	—	—
Peas.....	200	—	—	—	—
Screenings.....	249	4,976	93	56	31
Rapeseed.....	2	5	201	577	—
Sample Feed Grain.....	23	—	11	—	4
Mustard Seed.....	7	—	19	2	—
Sample Grain.....	32	31	27	—	28
Totals.....	1,500	8,376	2,002	1,515	320
	Saskatoon	Lethbridge	Medicine Hat	Vancouver, Victoria and Prince Rupert	Churchill
Wheat.....	749	551	3	94	—
Oats.....	69	—	—	237	—
Barley.....	8	2	—	20	—
Flaxseed.....	—	—	—	2	—
Rye.....	—	—	—	21	—
Mixed Grain.....	1	—	8	2	—
Corn.....	—	—	—	10	—
Buckwheat.....	—	—	1	—	—
Peas.....	—	—	—	—	—
Screenings.....	243	18	19	1,818	31
Rapeseed.....	103	6	—	6	—
Sample Feed Grain.....	—	—	—	—	—
Mustard Seed.....	—	33	—	8	—
Sample Grain.....	4	—	22	—	—
Totals.....	1,177	610	53	2,218	31

EASTERN DIVISION

Table D-9—Carlot Inspections Eastern Grain, Crop Year 1965-66, by Grains and Points

Grain	Montreal	Toronto	Chatham	Total
Wheat.....	1	164	2,333	2,498
Oats.....	—	30	30	60
Barley.....	—	4	423	427
Mixed Grain.....	—	—	2	2
Rye.....	—	—	18	18
Corn.....	—	—	3,696	3,696
Beans.....	—	—	280	280
Soybeans.....	2	15	2,074	2,091
Totals.....	3	213	8,856	9,072

**Table D-10—Carlot Inspections Eastern Grain, Crop Year 1965-66,
by Grains, Grades and Points**

Grades	Montreal	Toronto	Chatham	Total
WHEAT				
1 Canada Eastern White Winter	—	18	524	542
2 Canada Eastern White Winter	—	54	1,297	1,351
3 Canada Eastern White Winter	—	13	238	251
4 Canada Eastern White Winter	—	2	14	16
5 Canada Eastern White Winter	—	—	11	11
1 Canada Eastern Mixed Winter	—	—	7	7
2 Canada Eastern Mixed Winter	—	—	36	36
3 Canada Eastern Mixed Winter	—	—	8	8
Tough	1	77	174	252
Smutty	—	—	2	2
Weevilly	—	—	3	3
Damp	—	—	3	3
Sample	—	—	16	16
Totals	1	164	2,333	2,498
OATS				
3 Canada Eastern	—	1	5	6
4 Canada Eastern	—	14	11	25
5 Canada Eastern	—	9	—	9
Tough	—	2	13	15
Sample	—	4	1	5
Totals	—	30	30	60
BARLEY				
2 Canada Eastern Six Row	—	—	1	1
3 Canada Eastern Six Row	—	—	163	163
3 Canada Eastern Two Row	—	—	138	138
4 Canada Eastern	—	2	46	48
5 Canada Eastern	—	—	4	4
6 Canada Eastern	—	—	2	2
Tough	—	1	66	67
Damp	—	—	2	2
Sample	—	1	1	2
Totals	—	4	423	427
MIXED GRAIN				
Tough	—	—	1	1
Sample	—	—	1	1
Totals	—	—	2	2
RYE				
2 Canada Eastern	—	—	8	8
2 Canada Eastern Special	—	—	1	1
Tough	—	—	8	8
Damp	—	—	1	1
Totals	—	—	18	18

**Table D-10—Carlot Inspections Eastern Grain, Crop Year 1965-66,
by Grains, Grades and Points—Concluded**

Grades	Montreal	Toronto	Chatham	Total
CORN				
Extra Dry 1 Canada Eastern Yellow-----	—	—	695	695
1 Canada Eastern Yellow-----	—	—	358	358
Extra Dry 2 Canada Eastern Yellow-----	—	—	733	733
2 Canada Eastern Yellow-----	—	—	659	659
Extra Dry 3 Canada Eastern Yellow-----	—	—	402	402
3 Canada Eastern Yellow-----	—	—	558	558
Extra Dry 4 Canada Eastern Yellow-----	—	—	54	54
4 Canada Eastern Yellow-----	—	—	58	58
Extra Dry 5 Canada Eastern Yellow-----	—	—	11	11
5 Canada Eastern Yellow-----	—	—	11	11
Tough-----	—	—	77	77
Damp-----	—	—	2	2
Moist-----	—	—	50	50
Wet-----	—	—	28	28
Totals-----	—	—	3,696	3,696
BEANS				
Extra 1 Canada Eastern Pea-----	—	—	2	2
1 Canada Eastern Pea-----	—	—	206	206
2 Canada Eastern Pea-----	—	—	37	37
3 Canada Eastern Pea-----	—	—	1	1
4 Canada Eastern Pea-----	—	—	4	4
Tough-----	—	—	30	30
Totals-----	—	—	280	280
SOYBEANS				
1 Canada Yellow-----	—	3	199	202
2 Canada Yellow-----	2	6	1,114	1,122
3 Canada Yellow-----	—	—	95	95
4 Canada Yellow-----	—	—	24	24
5 Canada Yellow-----	—	—	5	5
Tough-----	—	6	594	600
Damp-----	—	—	35	35
Moist-----	—	—	4	4
Wet-----	—	—	3	3
Sample-----	—	—	1	1
Totals-----	2	15	2,074	2,091
Totals, All Grains-----	3	213	8,856	9,072

Table D-11—Cargo Inspections, Eastern Grain, Crop Year 1965-66

Grain	St. John and Halifax	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.	bu.
Wheat.....	—	23,780	—	778,357	802,137
Buckwheat.....	—	26,005	—	—	26,005
Corn.....	—	40,000	—	460,094	500,094
Soybeans.....	3,697	148,254	—	1,768,626	1,920,577
Totals.....	3,697	238,039	—	3,007,077	3,248,813

Table D-11A—Cargo Inspections, Western Grain, Crop Year 1965-66

Grain	St. John and Halifax	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.	bu.
Wheat.....	—	—	—	—	—
Oats.....	—	1,764	—	—	1,764
Flaxseed.....	1,357,937	478,419	—	—	1,836,356
Buckwheat.....	—	31,790	—	—	31,790
Peas.....	47,085	102,251	—	—	149,336
Domestic Mustard Seed.....	—	52,829	—	—	52,829
Sunflower Seed.....	—	3,690	—	—	3,690
Totals.....	1,405,022	670,743	—	—	2,075,765

**Table D-12—Inspections, Eastern Grain in Bins, Trucks or Warehouses,
Crop Year 1965-66**

Grain	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.
Wheat.....	—	—	700	700
Buckwheat.....	28,148	—	—	28,148
Beans.....	—	4,667	992,953	997,620
Soybeans.....	167,918	—	770	168,688
Totals.....	196,066	4,667	994,423	1,195,156

Table D-13—Inward and Export Cargoes Sampled and Grade Checked, Crop Year 1965-66

	Montreal	Sorel	Three Rivers	Quebec	Halifax and St. John	Baie Comeau	Total
	bu.	bu.	bu.	bu.	bu.	bu.	bu.
Eastern Grain							
Inward	197,229	—	—	—	—	—	197,229
Export	2,634,172	—	—	109,150	179,368	—	2,922,690
Western Grain							
Inward	19,514,532	717,047	—	—	—	—	20,231,579
Export	118,960,611	51,635,851	30,428,596	23,226,923	38,668,907	75,592,814	338,513,702
Totals	141,306,544	52,352,898	30,428,596	23,336,073	38,848,275	75,592,814	361,865,200

Table D-14—Grain Sampled but not Inspected, Crop Year 1965-66

	Montreal	Toronto and Chatham	Sorel, Three Rivers and Quebec	Halifax and St. John	Baie Comeau	Total
Eastern Grain						
Carlots	720	—	—	—	—	720
Inward Cargoes (bu.)	30,397	—	—	—	—	30,397
Outward Cargoes (bu.)	488,809	—	—	—	—	488,809
Bin Lots (bu.)	—	—	—	—	—	—
Western Grain						
Carlots	47	—	—	—	—	47
Inward Cargoes (bu.)	—	—	—	—	—	—
Outward Cargoes (bu.)	24,165	—	—	—	—	24,165
Bin Lots (bu.)	—	—	—	—	—	—
U.S.A. Grain						
Carlots	162	—	—	—	—	162
Inward Cargoes (bu.)	723,826	—	74,899	99,332	—	898,057
Outward Cargoes (bu.)	8,629,387	—	8,332,299	—	36,631,136	53,592,822
Bin Lots (bu.)	795,257	—	—	—	—	795,257
Totals—Cars	929	—	—	—	—	929
—Bushels	10,691,841	—	8,407,198	99,332	36,631,136	55,829,507

A P P E N D I X E

Weighing Division

H. C. BRITTON, *Chief Weighmaster*

Under the provisions of Sections 33 and 124 of the Canada Grain Act, all grain received into or shipped from licensed terminal elevators is weighed under supervision of the Board's Weighing staffs. Weighing services are also provided at licensed mill elevators in the Western Division.

During the Crop Year 1965-66 services were provided at 45 semi-public and private terminal elevators, and when required, at 27 mill elevators in the Western Division. Weighing services were also provided at Baie Comeau.

All scales and equipment for transferring grain to scales on receipt and from scales for shipment in all licensed terminal elevators and serviced mill and Eastern elevators were regularly inspected under the provisions of Section 92 of the Act. In accordance with the special arrangement with the Standards Branch of the Department of Trade and Commerce, all scales in licensed terminal and Eastern elevators were inspected, verified and stamped "Certified" by the Board's scale inspectors acting as inspectors under the Weights and Measures Act. Special inspections were made when any doubt arose as to the accuracy of a scale.

Newly constructed elevator facilities and alterations to elevators and grain handling equipment were inspected by officials of the Division to ensure that no condition existed which might affect the accuracy of the weighing of grain received at or shipped from these elevators.

The Division maintained a close check on reported outturns at Eastern elevators of cargoes loaded at Lakehead elevators, and thorough investigations were made in cases where complaints were received relating to reported excessive outturn shortages. Detailed reports of the results of these investigations were submitted to the Board.

Under provisions of Sections 139 and 140 of the Canada Grain Act, weighovers were conducted at 27 terminal elevators and 19 Eastern elevators, and results were submitted to the Board for comparison with records of outstanding warehouse receipts.

The transfer of the Weighing Division headquarters office to Winnipeg during 1965 has provided closer liaison with the Board and with officers of the other divisions, and has resulted in more effective handling of matters where the functions of the division are involved.

In co-operation with railway officials, an improved procedure has been developed for reporting and dealing with box cars found to be leaking grain. It is anticipated that there will be a continuing reduction in grain losses from defective cars now that such cars are being detected and repaired more promptly.

Staff training continues to be a major project with this division. Classes are held when possible, information and study literature is distributed to staff members, and on-the-job training is provided by senior officers at major points, with special emphasis on all equipment used in the conveying and weighing of grain. A new revised edition of the Grain Weighing Manual

is in the process of final editing and will be released early in 1967 for the operational staff.

Difficulty has been experienced in recruiting suitable staff at Pacific Coast ports due to salary levels being lower than those paid by the private grain industry.

With regard to expansion of terminal elevator facilities, a two-million bushel annex is being added to a major grain elevator at the Lakehead, and a new elevator is under construction at the Pacific Coast. The latter will be equipped with weigh scales using the levertronic system in conjunction with load-cells. This is the first application of this system to large grain scales in Canada.

Summaries of grain weighed during the crop year and other related information, are given in the tables attached to this Appendix.

Table E-1—Gross Quantities of all Grains Weighed at Terminal Elevators in the Western Division during 1955-56 Crop Year

Point	Wheat	Oats	Barley	Rye	Flaxseed	Corn	Buckwheat	Mustard Seed	Rapeseed	U.S. Mustard Seed	Miscellaneous
	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	bu.	lbs.
RECEIPTS											
Fort William-Port Arthur.....	369,110,229	41,212,255	58,258,813	7,388,499	17,017,187	—	138,534	—	1,754,233	—	161,038,275
Vancouver-New Westminster.....	169,367,180	8,248,884	16,268,326	3,939,123	7,789,790	—	54,885	959,681	14,146,679	—	65,876,694
Victoria.....	11,880,342	1,971	—	—	594	—	—	—	—	—	—
Prince Rupert.....	17,409,908	822	—	—	—	—	—	—	—	—	—
Churchill.....	25,334,023	—	—	—	86	—	—	—	—	—	—
Calgary.....	1,391,600	6,011	839,254	22,353	49,526	—	—	89,257	307,085	—	23,230
Edmonton.....	346,863	6,390	405,165	4,156	39,788	—	—	7,183	1,073,990	—	100,990
Lethbridge.....	518,574	—	—	—	—	—	—	—	—	—	—
Moose Jaw.....	734,017	—	2,322	—	—	—	—	—	102,544	—	9,260
Saskatoon.....	721,031	—	270	—	198	—	—	—	—	—	236,930
North Transcona.....	49,114	28,798	26,682	—	—	—	—	—	—	—	—
Total Receipts	596,862,881	49,505,131	75,800,832	11,354,131	24,897,169	—	193,419	1,056,121	17,384,531	—	227,285,379
SHIPMENTS											
Fort William-Port Arthur.....	373,689,392	41,207,987	55,501,036	6,196,587	14,310,830	—	167,403	—	1,343,302	—	683,603,810
Vancouver-New Westminster.....	160,542,664	9,117,131	15,446,758	3,753,483	6,369,562	—	54,566	1,022,029	12,345,144	—	461,093,403
Victoria.....	11,080,455	51,822	7,615	—	1,466	—	—	—	—	—	15,122,000
Prince Rupert.....	17,105,776	90,409	—	—	—	—	—	—	—	—	23,882,440
Churchill.....	25,077,496	57,000	—	—	—	—	—	—	—	—	11,947,820
Calgary.....	2,112,713	14,083	924,313	47,724	46,576	—	—	54,399	275,873	—	2,418,690
Edmonton.....	778,499	21,847	731,904	4,156	32,934	1,619	—	—	968,961	—	5,594,810
Lethbridge.....	1,100,356	—	—	—	—	—	—	—	—	—	411,100
Moose Jaw.....	241,385	—	—	—	—	—	—	—	—	—	268,840
Saskatoon.....	1,293,715	—	2,322	—	—	—	—	—	—	—	1,725,750
North Transcona.....	884,547	106,937	37,761	—	—	—	—	—	271,684	—	547,660
Total Shipments	593,906,998	50,767,216	72,651,709	10,001,950	20,361,468	1,619	221,969	1,076,428	15,204,964	—	1,206,616,323

Table E-2—Number of Cars Leaking and Cars with Missing Seals at the Lakehead, and Other Points for the Crop Year 1965-66

Destination	Cars Leaking		Missing Seals	
	C.N.R.	C.P.R.	C.N.R.	C.P.R.
Lakehead Elevators.....	15,715	20,964	3,628	8,282
Other Points.....	8,986	8,361	2,992	3,408
Totals.....	24,701	29,325	6,620	11,690
Totals—Both Railways.....	54,026		18,310	

Table E-3—Number of Cars Weighed at all Points and Percentages of such Cars found Leaking or with Defective Seals, Crop Years 1964-65 and 1965-66

	Number		Percentage of Total	
	1965-66	1964-65	1965-66	1964-65
Cars Weighed In.....	415,758	329,057	100.0	100.0
Inward Cars Leaking.....	54,026	57,175	12.9	17.4
Inward Cars with Missing or Defective Seals.....	18,310	10,899	4.4	3.3
Cars Weighed Out.....	20,970	16,127	—	—

Table E-4—Average Reported Outturn Shortages on Vessel Shipments of Grain from Fort William-Port Arthur to Canadian and United States Ports during the 1965-66 Crop Year

Grain	Bushels Shipped	Shortage in Pounds per 1,000 bushels	
		1965-66	1964-65
CANADIAN PORTS			
Wheat.....	338,267,346	46.41	37.75
Durum Wheat.....	28,378,221	41.70	41.67
Oats.....	34,306,174	22.81	25.84
Barley.....	39,659,115	38.72	39.92
Rye.....	3,159,300	57.06	50.98
Flaxseed.....	4,193,699	56.62	45.57
Rapeseed.....	196,822	78.25	—
Screenings (in tons).....	83,601	1.47 lbs. per ton	1.28 lbs. per ton
UNITED STATES PORTS			
Wheat.....	736,827	94.38	—
Barley.....	4,164,963	63.89	51.38
Rye.....	1,540,500	94.20	93.68
TOTAL CANADIAN AND UNITED STATES PORTS			
Wheat.....	339,004,173	46.52	37.75
Durum Wheat.....	28,378,221	41.70	41.67
Oats.....	34,306,174	22.81	24.06
Barley.....	43,824,078	41.11	42.07
Rye.....	4,699,800	69.23	78.13
Flaxseed.....	4,193,699	56.62	45.57
Rapeseed.....	196,822	78.25	—
Screenings (in tons).....	83,601	1.47 lbs. per ton	1.28 lbs. per ton

APPENDIX F

Research Laboratory

G. N. IRVINE, *Director*

Section 22 of the Canada Grain Act requires that "The Board shall maintain an efficient and adequately equipped laboratory for research work in relation to grain."

Work of the Research Laboratory during 1966 is summarized in this brief report. The Laboratory's study of the quality of Canadian cereal grains marketed during the 1965-66 crop year, the study of the quality of the 1966 crop of Canadian cereals, studies of the quality of plant breeders varieties of several cereals, basic and applied research studies are the main topics presented. More detailed information on these topics is given in the Annual Report of the Research Laboratory which is published separately.

Quality of Grain Marketed in 1965-66

Again during the 1965-66 crop year, the Laboratory undertook its continuing study of the quality of various Canadian cereal grains as they were moved forward from the country elevators into the domestic or the export market. Red spring wheat, amber durum wheat, barley, flax and rapeseed are the major cereals in these continuing studies: data from these studies are given in appendix tables in the 1966 Annual Report of the Laboratory.

Of the spring wheat unloaded at terminal elevators during the year, No. 3 Manitoba Northern was the predominant grade followed closely by No. 2 Northern grade; together these two grades represented nearly 50% of the spring wheat movement. No. 4 Northern was the next largest in volume (source: Board of Grain Commissioners, Statistics Division records). Spring wheat in the grades No. 1 to No. 4 Northern averaged 13.9% in protein content, half a unit lower than the marketings of the previous year: test weight per bushel averaged 59.2 lb. Wheat of the grades No. 1, No. 2 and No. 3 Manitoba Northern was about equal to that of the corresponding grade of the previous year in baking strength; No. 4 Northern, was somewhat weaker. No. 5 Wheat on the other hand was considerably stronger this year.

A comparison of the quality of the spring wheat exports from the three seaboard areas during the 1965-66 crop year shows that Churchill shipments were slightly higher, grade for grade, in overall baking strength than either Atlantic or Pacific shipments. Pacific shipments were generally higher in baking absorption than Atlantic shipments but, grade for grade, protein content and baking strength were about the same at both coasts, except for No. 5 Wheat which was lower in protein at the Pacific coast.

With the exception of the No. 1 C.W. A.D., all grades of durum wheat moved forward from country elevators during the year were lower in thousand kernel weight than the grain moved in the previous year. Lipoxidase levels in the semolinas from all grades were better this year (values were slightly lower), so that, in spite of slightly lower pigment levels in the semolina, macaroni pigment was higher. Macaroni color was slightly better for all grades of durum wheat this year.

The quality of the higher grades of barley marketed during the year was good. These grades however were in short supply because much of the 1965 barley crop had been damaged by unfavorable harvest conditions. Irregular germination, dormancy and water sensitivity were factors encountered in the barley marketed in the 1965-66 crop year. These produced problems in malting and reduced the enzymatic activity of the malts. Nitrogen contents of the higher grades, and in particular the Two-row grades, were slightly lower than those for the previous year. Flaxseed shipments during the crop year were of generally higher quality than those of the previous year. On the other hand, rapeseed moved forward to market during the year was slightly lower in quality than that of the previous year; both oil content and protein content of the meal were lower this year.

Estimated Quality of the 1966 Crop

Moisture conditions were most favorable across the prairies in early spring. Seeding was delayed in many areas first by low temperatures and then by showery weather. Excessive rains fell in the Red River valley in both spring and early summer, but in the Peace River area, no significant rain was received until July. Elsewhere timely rains brought about good germination; growing conditions were good for most of the summer and rust was not a serious problem. Such growth produced a bumper crop of most western cereals. Harvest weather was exceptionally good all across the Prairies except in the Peace River where excessive rain fell. 1966 crops in general are considerably higher in grade than either the 1965 or the 1964 crops. The 1966 hard red spring wheat crop was estimated to be a record 793.7 million bushels of which more than 90% is expected to be in the No. 1, No. 2, and No. 3 Manitoba Northern grades (9%, 44%, and 39% respectively). Average protein content for the 1966 spring wheat crop was estimated to be 13.2%, slightly lower than the 13.5% figure for the 1965 crop. The long-term average figure for all spring wheat crops from 1927 to 1965 is 13.6%.

Compared with the 1965-66 fourth quarter Pacific coast export shipments, all grades of the 1966 crop of spring wheat from the Western Prairies (western Saskatchewan and Alberta) are higher in test weight per bushel and in 1000 kernel weight, but are lower in protein content and in baking strength. Baking absorption however, is very significantly better for all grades of the new crop. In spite of excellent harvest weather this year, flour enzyme levels in the new crop wheat are significantly higher than those of the fourth quarter Pacific exports. Extensigram characteristics are reduced for all grades of new crop wheat. No. 2 and No. 3 Northern wheat is slightly stronger than the No. 1 Northern wheat and this in turn is stronger than the No. 4 Northern wheat.

Compared with the 1965-66 fourth quarter Atlantic seaboard exports, all grades of new crop wheat from the Eastern Prairies (Manitoba and eastern Saskatchewan) were higher in test weight per bushel and in 1000 kernel weight. For all grades, the flour ash is lower, flour color is better, and baking absorption is higher. On the other hand, wheat protein content is lower for all grades except No. 4 Northern; loaf volumes are lower for all grades, and dough strength, as reflected in extensigram height and in curve area, is lower. Differences in milling and baking quality between the grades of Eastern Prairie wheat are relatively small. New crop wheats from the Eastern Prairies tend to be slightly stronger than those from the Western Prairies.

The 1966 amber durum wheat crop, like the spring wheat crop, was basically high in grade, with less than 20% of the 30.3 million bushel crop expected to grade No. 4 C.W. or lower. Protein content of the durum crop averaged

13.2%, slightly lower than in the previous year. The new crop durum is higher than the 1965 crop in test weight, hectoliter weight and in 1000 kernel weight. The rheological properties as indicated by the farinograph mixing curve, show longer mixing times are required to obtain maximum dough consistency but greater stability beyond the peak; these properties are a reflection of this year's lower protein levels. Macaroni quality for the grades No. 2 C.W. and No. 4 C.W. is about the same as for the previous year, but is somewhat lower for the No. 3 C.W. and Extra No. 4 C.W. Compared with exports of durum wheat shipped during the fourth quarter of the 1965-66 crop year, the new crop durum wheat is higher in test weight per bushel, kernel weight, and (except for No. 4 C.W.) in percentage vitreous kernels. Semolina pigment is higher this year, but the lipoxidase activity is also higher, so that macaroni pigments are only about the same (No. 3 C.W. and Extra No. 4 C.W.) or are lower (No. 2 C.W.). Macaroni quality overall is at a satisfactory level for all grades.

The 1966 barley crop at 279 million bushels is the second largest ever produced and is 77 million bushels larger than the 1965 crop. Except in the Peace River area, harvesting conditions were ideal throughout the west. The crop is higher in grade than in 1964 and 1965 and there are few problems with germination. The supply of high grade barley is adequate for both domestic and export needs. For all grades, values for percentage of plump barley and for kernel weight are high. Nitrogen content for the various grades are similar to those for the 1965 crop. Extract yields and enzymatic activity levels are good. The new variety Conquest is in commercial production for the first time this year, and its agronomic yield and its malting quality have been impressive.

The 1966 crop of flaxseed, estimated to be 23 million bushels, has an average oil content of 43.1% fractionally higher than the previous crop. Because of good growing conditions and favorable harvest weather, it is expected that the bulk of the flax will qualify for the No. 1 C.W. grade. The 1966 crop of rapeseed, a record 25.5 million bushels, had an average oil content of 44.8%, an increase of over 1 percentage unit above the level for the 1965 crop. Weed growth was particularly troublesome this year, and the presence of inseparable seeds is the major degrading factor in the oil-seeds this year.

Service to Other Divisions of the Board

Each year the Laboratory provides a variety of scientific and technical services for other Divisions of the Board of Grain Commissioners. The majority of these services are for the Grain Inspection Division and for 1966 included the following: Detailed quality tests of the 1966 standard and Export Standard samples of the various grades of hard red spring and amber durum wheat, and barley and the Standard samples of flaxseed. The official loading samples representative of a number of individual export shipments of grain were tested for their quality. The Laboratory maintained its program of the supervision of moisture testing equipment in use in Inspection Offices across Canada. This phase of the work was expanded this year to include the Model 919 moisture meters in Eastern Canada that are equipped with the 3½ inch cell. Servicing, checking of the calibration, adjusting of the Model 919 equipment was undertaken when necessary. Chemical tests to check for mercurial fungicide contamination of grain, and to check fat acidity levels in oil seeds and in grain stored for prolonged periods were made on a large number of samples. Several hundred samples of tough and damp grain dried in terminal elevators were checked for quality. The

determination of lipoxidase activity in numerous durum wheat samples and the checking of balances, weights, and thermometers for accuracy represented other analytical services.

The Laboratory's drawing and photographic sections rendered services on numerous occasions for the Inspection Division, the Executive Division, Personnel Division, and the Statistics Division. The Laboratory's workshop provided a variety of services, from time to time, for all of the other Divisions of the Board. The Laboratory's data processing section answered a number of requests from other Divisions throughout the year by extracting and compiling information from the Laboratory's past records.

Bulletins and Maps

Each year the Laboratory conducts an extensive survey of the quality of the new crop wheat, barley, flax and rapeseed. Quality data for the different grades of the 1966 crop of these cereals were compiled and reported to the Committee on Western Grain Standards at its meeting in Winnipeg in late October. These data were later published in the form of two protein maps for spring wheat (a preliminary map, which receives only limited distribution, and a final map), and three 1966 crop bulletins (one for hard red spring and amber durum wheat, one for barley, and one for flax and rapeseed). These publications receive a wide distribution not only in Canada, but also in many countries throughout the world. The Laboratory for the third successive year carried out a survey of the protein content of the 1966 crop of Eastern White Winter wheat. The results were presented to the Committee on Eastern Grain Standards at its meeting in Toronto and were distributed, in mimeographed form, to interested parties primarily in eastern Canada.

The Laboratory continued to publish its quarterly bulletins giving quality data for samples representative of the average of each grade of hard red spring and amber durum wheat exported from Canada via Atlantic and Pacific coast ports. These publications which are widely distributed throughout the world provide a continuing up-to-date summary of the level of quality in Canada's bread wheat exports.

The total distribution of Laboratory periodical publications (bulletins and maps) was approximately 60,000 this year.

Variety Testing

The Associate Committee on Grain Research of the National Research Council of Canada co-ordinates an extensive program of quality testing on new varieties of cereal grains developed by plant breeders to ensure that only those which measure up to an appropriate high level of quality become cereals of commerce in Canada. Each year the Laboratory takes an active part in the program and in 1966 carried out tests on 25 varieties of hard red spring wheat, 20 varieties of amber durum wheat, and 7 varieties of barley.

As a final stage in this program, the Laboratory organized a collaborative study of the quality of three new durum wheat varieties which have shown promise in earlier years of these quality tests. Three cereal technologists in Europe and one each in Canada and the United States are participating, together with the Grain Research Laboratory in the assessment of the quality of these new wheats relative to Mindum, the statutory standard of quality in Canada. Results of these tests will be considered by the Associate Committee on Grain Research at its 1967 meeting.

Detailed milling and baking tests were again carried out on a series of spring wheat varieties grown in the Uniform Quality Nursery. Quality

tests were also made on the durum wheats, Ramsey and Stewart, grown in 1965 at 14 stations in Manitoba. This study, a co-operative project with the durum wheat breeder at the Department of Agriculture Research Station, Winnipeg, was to assess the effect of geographic location and soil zone on varietal performance.

The Laboratory again participated in the annual quality testing program of the Crop Quality Council of the United States. Thirty samples representing 9 spring wheat varieties grown at six stations in the north central and north western United States, were tested this year.

Service to Other Organizations

The Laboratory co-operates closely with the Technical Service and Market Research Department of the Canadian Wheat Board. Samples collected by the Wheat Board representatives in their visits to various market areas have been assessed in the Laboratory and quality summaries provided. Quality data obtained by the Laboratory on samples of world wheats entering various market areas have been provided to the Wheat Board. Foreign missions, including cereal technologists and grain trade dignitaries visiting Canada under the auspices of the Wheat Board, have visited the Laboratory and inspected its facilities. Cereal technologists visiting Canada under Wheat Board sponsorship have received specialized training in the Laboratory. On several occasions, photographic services have also been provided.

Several projects have been carried out in co-operation with scientists of the Department of Agriculture Research Stations at Winnipeg, Brandon, Melfort, Saskatoon, and Lethbridge. Among these studies are: an assessment of quality changes in wheat stored under simulated farm conditions; assessment of the quality of a series of durum wheat lines derived from the variety Ramsey; determination of protein content on wheats and barleys from studies of the effect of fertilizers; data from the Laboratory's annual harvest surveys of the oil seed crops were provided for use in a detailed statistical study.

Requests for technical information relating to farm drying of grain, moisture meters, design and construction of laboratory equipment, for advice on analytical and processing problems encountered in cereals and cereal products, etc., have been answered. Professional and technical organizations and societies for chemistry and cereal technology have received active support from professional and senior technical staff. Scientific papers were presented by staff members at annual and/or local section meetings of the American Association of Cereal Chemists, American Society of Brewing Chemists, and the Association of Operative Millers. Members were also active in the following societies: International Association for Cereal Chemistry, Canadian Federation of Biological Sciences, Chemical Institute of Canada, Federation of American Societies for Experimental Biology, the Conference on International Trade and Canadian Agriculture.

Research

A program of research and development is an indispensable background for effective service and control work which is the basis of information provided by the Research Laboratory to the Board of Grain Commissioners, the Canadian Wheat Board and other interested bodies.

In basic research the farinograph recording dough mixer has been applied to measure the strength of gluten proteins from hard red spring wheat. Studies on the separation of proteins in flours and doughs with the

gel filtration technique have shown that different flours respond differently to extraction and mixing. A method for the determination of reactive and total sulfhydryl and disulfide content of flours has been developed. Research with radioactive tracers has indicated that a hitherto unknown component is significantly involved in the improver reaction in dough. A colorimetric method for the determination of mechanically damaged starch in milling has been adapted. A study of the isolation of the enzyme alpha-amylase is in progress. Amino acid analysis of a wide variety of wheats suggests that it will be difficult to produce high lysine wheats of superior nutritional value by cross-breeding.

A variety of investigations of more applied nature has been receiving attention. An apparatus for air classification of flours has been designed and constructed for flour studies. A system using a laboratory mill, was developed for milling "atta" a whole wheat product used in India and Pakistan. Factors involved in the production of English-type bread by the Chorleywood Bread Process have been evaluated. When wheat is subjected to wet harvest conditions, the deterioration in baking quality is attributable to a small percentage of kernels that are non-dormant. The amylograph viscosity of bread crumb is being used to study starch gelatinization during baking and the Brabender oven-rise recorder is being used for studies of gas production and retention by doughs during fermentation.

In durum research results indicate that components of durum semolina other than gluten and starch are largely responsible for the cooking characteristics of pasta products. Attempts to isolate wheat lipoxidase enzyme are continuing.

In malting barley research comparative studies were made on free and bound amylases in barley, wheat and rye. Complications arising from the use of thiols to activate the bound form of this enzyme have been recognized and improved analytical methods are now used. The development of proteolytic enzymes during the malting process is being studied and investigation of "chill haze" components in barley, malt, and beer is being continued. Methods for purification and characterization of these components are being developed.

In a more general area, the Laboratory has taken on the responsibility for monitoring grain shipments for chemical residues to ensure that Canadian grain is free from objectionable chemicals.

Staff

Dr. W. Bushuk, head of the Wheat Section of the Laboratory was granted a leave of absence from October 1, 1966 to accept a two-year term appointment with the Plant Science Department of the University of Manitoba.

Dr. J. W. Clayton, a member of the Laboratory's professional staff for the past five years, resigned at the year end to accept a post with the Fisheries Research Board at its Freshwater Institute, Winnipeg. Two Japanese cereal technologists are currently spending a year of study in the Laboratory: Mr. T. Yasunaga of the Food Research Institute, Ministry of Agriculture and Forestry, Tokyo is sponsored by the Board of Grain Commissioners for Canada; Mr. K. Ikezoe of the Japan School of Baking, Tokyo, is sponsored by The Canadian Wheat Board.

There were ten additions to and eight resignations from the Laboratory staff in clerical stenographic, and junior technician positions during the year. Mr. R. J. McLeod and Mr. V. M. Wood occupied the two summer positions for University Students in Chemistry.

Overseas Visits and Visitors

The Laboratory's program of technical service overseas visits to current and potential buyers of Canadian grain was increased again this year with six such visits being undertaken. In May Dr. Irvine and Dr. Hlynka, following attendance at the Fourth International Cereals and Bread Congress in Vienna, each undertook a series of visits in both continental Europe and in Great Britain. Dr. Tipples about the same time visited bakeries and baking machinery manufacturers in the U.K. in a survey relating to the use of the Chorleywood Bread Process. In October and November, Dr. Tipples visited Japanese mills, laboratories, and bakeries. Dr. Irvine accompanied Dr. Tipples on the first leg of these visits and then independently made visits in Singapore, Malaysia, and Hong Kong.

In addition, Dr. Irvine was an official Canadian Observer at a Food and Agriculture Organization Conference in Cairo in February on Cereals and Baking Technology for the Near East Region. In August, Dr. Tkachuk after attending the Second International Congress of Food Science and Technology in Warsaw, visited cereal laboratories in Great Britain and several European countries.

During the year the Laboratory received a number of missions from overseas countries including China, Japan, the U.S.S.R., and Yugoslavia, as well as three composite delegations, one from African countries, one from south east Asian countries, and one from seven near east countries. Mr. J. A. Chiriboga of the Ecuadorian Wheat Commission spent several weeks in the Laboratory studying in detail milling and baking procedures and analytical chemical methods used in the evaluation of grain quality. Visitors from the following areas were received in the Laboratory during the year: Australia, Belgium, England, France, India, Ireland, Japan, The Netherlands, Scotland, U.S.A., Venezuela, and Yugoslavia.

APPENDIX G

Canadian Government Elevators

A. H. WILSON, *General Manager*

In accordance with Section 166 of the Canada Grain Act and Order-in-Council P.C. 1372 of August 19, 1925, the Board manages and operates five interior terminal elevators at Moose Jaw, Saskatoon, Calgary, Edmonton and Lethbridge, and one terminal elevator at Prince Rupert.

During the crop year 1965-66 the elevators continued to be operated as semi-public terminals. The figures dealing with grain handlings are for the crop year 1965-66.

Handlings

The amount of grain in store at the end of the crop year is the smallest in over a decade, having been reduced from 5.33 million bushels a year ago, to 2.57 million bushels. On the other hand, receipts and shipments were the highest in over a decade. The bulk of the handlings was again the shipment of wheat to China through the Prince Rupert Elevator. Receipts of 16.9 million and shipments of 17.1 million bushels of wheat at Prince Rupert is a crop year record for that elevator.

Of the total grain handled, wheat accounted for 20.5 million bushels of receipts and 22.6 million bushels of shipments. Other significant handlings were: one and a half million bushels of barley (at Calgary) about the same as the previous year; one and a half million bushels of rapeseed, a drop from the previous year's figure of 2.4 million. Relatively small quantities of Oats, Rye, Flaxseed and Mustard Seed were handled at Calgary and Edmonton.

The elevators at Moose Jaw, Saskatoon and Lethbridge continued to remain relatively inactive.

Receipts and shipments by elevators were as follows:

Elevator	Capacity	Stocks August 1, 1965	Net Receipts	Net Shipments	Stocks July 31, 1966
	million bu.	bu.	bu.	bu.	bu.
Moose Jaw	5.50	218	718,314	243,945	474,587
Saskatoon	5.50	1,285,437	777,805	1,563,828	499,414
Calgary	2.50	1,658,670	2,625,557	3,464,465	819,762
Edmonton	2.35	1,214,787	1,729,731	2,527,507	417,011
Lethbridge	1.25	685,463	516,829	1,100,356	101,936
Prince Rupert	1.25	485,339	16,877,591	17,106,598	256,332
TOTALS	18.35	5,329,914	23,245,827	26,006,699	2,569,042

Charges

Charges for the 1965-66 crop year were the maximum allowed under the Board's regulation, with the exception that the storage charge on wheat, oats and barley at the interior terminals was 1/45 instead of the maximum of 1/30 cent per bushel per day after the first five days.

Maintenance

Three projects were undertaken by the Repair and Reconstruction Division. Concrete restoration and painting of the bins was carried out at the Edmonton Elevator. This completes the major concrete restoration projects begun in 1958. Extensive alterations were made to both dryers at Edmonton to improve their efficiency. The third project consisted of repairs to the unload shed roof at the Calgary elevator.

A wide range of medium-size repair, replacement and improvement projects were carried out at all elevators.

At Moose Jaw, cost was shared with the City to replace the watermain to the elevator; the septic system was modernized; a new tool house was constructed; modifications were made to the annex ventilators; and the water supply dugout was fenced.

At Saskatoon, the program of trackage replacement was continued and the heating boiler in the Welfare Building was completely re-tubed. At Calgary, a new railway level crossing was constructed.

At Edmonton, extensive rehabilitation to the automatic car dumpers was carried out, including renewal of the motors and controls and to the dumper mechanism itself. In addition, improvements were made to the signal light system.

There were no maintenance projects at the Lethbridge Elevator.

At Prince Rupert, a new Welfare Building was constructed; a new underground electric feeder cable was installed; two power grain shovels were replaced; the wheathead thresher was replaced; and new de-stoning equipment was purchased.

Administrative Changes

The production of grain documentation centrally at Head Office in Winnipeg by means of Electronic Data Processing, was inaugurated on July 1, 1966. Since then, numerous other clerical procedures have been centralized at Head Office. As a result of centralization, clerical staffs at the six elevators have been reduced from a total of twenty-two positions to twelve positions. The reduction was achieved by not replacing employees as they retired or resigned. One additional employee has been engaged at Head Office to cope with the increased volume of work.

Staff employed as at December 31, 1966, compared with December 31, 1965, is as follows:

	1966		1965	
	Continuing Establish- ment	Casuals	Continuing Establish- ment	Casuals
Winnipeg (Head Office).....	9	—	9	—
Moose Jaw.....	24	—	25	—
Saskatoon.....	25	—	25	—
Calgary.....	25	5	26	7
Edmonton.....	24	3	25	4
Lethbridge.....	18	3	18	2
Prince Rupert.....	25	3	27	26
Repair and Reconstruction Unit.....	3	1	3	—
Totals.....	153	15	158	39

Revenue and Expenditure

Revenue and Expenditure for the fiscal year 1965-66 compared with 1964-65 were as follows:

	1965-66	1964-65
Revenue.....	\$1,482,009	\$1,296,521
Expenditure.....	1,638,094	1,350,162
Deficit.....	\$ 156,085	\$ 53,641

It is pointed out that the figure for expenditure in 1965-66 includes costs, as determined by the Auditor General, of Government contributions on behalf of Canadian Government Elevators to the Public Service Superannuation Account, employees' surgical-medical plan and the Workmen's Compensation, as well as costs of accounting and cheque issue services, supplied by other departments. In the past, such items were not recorded as expenditures.

For the first nine months of the 1966-67 fiscal year, cash revenue was \$1,031,844, and cash expenditure was \$1,326,491.

A P P E N D I X H

**Table H-1—EXPENDITURE, by Point, Division and General Item, Fiscal Year
ended March 31, 1966**

Point and Division	Salaries	Rent	Travel	General	Total
	\$	\$	\$	\$	\$
Winnipeg					
Executive—Salaries of Commissioners-----	51,360.85	—	—	—	51,360.85
Executive—General-----	107,733.90	14,923.09	18,913.71	13,828.82	155,399.52
Assistant Commissioner-----	16,446.50	—	1,914.07	187.50	18,548.07
Research Laboratory-----	355,788.85	44,467.47	11,447.14	125,860.52	537,563.98
Statistics-----	190,817.60	17,905.36	3,063.77	64,706.36	276,493.09
Appeal Tribunal-----	10,150.00	—	—	—	10,150.00
Standards Committee-----	—	—	1,870.21	1,020.00	2,890.21
Inspection-----	423,247.20	29,842.53	25,065.64	49,190.00	527,345.37
Weighing-----	45,792.34	4,113.32	8,882.01	1,635.00	60,422.67
Churchill					
Inspection-----	3,093.69	25.00	2,078.64	147.00	5,344.33
Weighing-----	—	—	1,633.47	—	1,633.47
Keewatin					
Inspection-----	4,636.48	—	—	—	4,636.48
Weighing-----	7,226.56	—	—	—	7,226.56
Saskatoon					
Assistant Commissioner-----	16,887.50	1,112.52	2,531.32	329.16	20,860.50
Inspection-----	50,672.30	2,012.48	215.00	390.00	53,289.78
Weighing-----	39,070.00	—	—	—	39,070.00
Moose Jaw					
Inspection-----	18,332.00	—	497.00	192.00	19,021.00
Weighing-----	21,260.00	—	—	—	21,260.00
Regina					
Assistant Commissioner-----	16,135.60	1,715.00	1,765.06	316.87	19,932.53
Medicine Hat					
Inspection-----	—	—	—	—	—
Weighing-----	12,860.00	—	—	—	12,860.00
Lethbridge					
Inspection-----	12,632.00	—	92.00	52.00	12,776.00
Weighing-----	5,830.97	—	—	—	5,830.97
Calgary					
Inspection-----	92,938.34	5,121.00	1,644.17	1,425.00	101,128.51
Weighing-----	60,305.00	756.00	983.64	211.00	62,255.64
Edmonton					
Inspection-----	91,182.63	9,370.00	1,416.04	2,488.00	104,456.67
Weighing-----	20,242.00	—	40.00	—	20,282.00
Assistant Commissioner-----	16,887.50	1,992.00	3,025.56	341.29	22,246.35
Vancouver					
Inspection-----	413,517.00	7,207.00	6,647.45	14,288.93	441,660.38
Weighing-----	298,763.03	937.60	4,354.07	2,195.00	306,249.70
Statistics-----	62,187.19	8,755.40	—	1,914.85	72,857.44
Victoria					
Inspection-----	26,961.32	—	—	288.00	27,249.32
Weighing-----	11,459.42	—	—	—	11,459.42

**Table H-1—EXPENDITURE, by Point, Division and General Item, Fiscal Year
ended March 31, 1966—Concluded**

Point and Division	Salaries	Rent	Travel	General	Total
	\$	\$	\$	\$	\$
Prince Rupert					
Inspection-----	23,057.58	—	—	169.00	23,226.58
Weighing-----	12,993.13	—	—	—	12,993.13
Fort William					
Inspection-----	991,911.56	32,138.58	10,879.51	39,637.00	1,074,566.65
Weighing-----	851,498.92	3,954.97	32,017.06	6,160.00	893,630.95
Statistics-----	79,877.03	9,975.60	311.75	1,201.34	91,365.72
Toronto					
Inspection-----	10,896.00	1,200.00	59.00	390.00	12,545.00
Weighing-----	—	—	—	—	—
Chatham					
Inspection-----	49,817.47	4,320.00	12,320.90	1,218.00	67,676.37
Montreal					
Inspection-----	239,066.86	5,570.00	31,846.90	4,407.00	280,890.76
Weighing-----	10,491.00	1,200.00	—	325.70	12,016.70
Statistics-----	22,421.78	2,400.00	—	1,030.97	25,852.75
Baie Comeau					
Inspection-----	21,763.75	—	1,197.12	—	22,960.87
Weighing-----	6,518.42	—	29.40	—	6,547.82
Totals-----	4,824,731.27	211,014.92	186,741.61	335,546.31	5,558,034.11

**Table H-2—ACCRUED REVENUE, by Point and Division, Fiscal Year
ended March 31, 1966**

Point and Division	Fees	Other Revenue (a)	Total
	\$	\$	\$
Winnipeg			
Executive-----	—	17,650.00	17,650.00
Statistics-----	75,229.08	20.00	75,249.08
Appeal Tribunal-----	2,202.00	—	2,202.00
Research Laboratory-----	—	—	—
Inspection-----	39,178.86	4,027.06	43,205.92
Weighing-----	23,717.30	883.82	24,601.12
Churchill			
Inspection-----	106,758.65	—	106,758.65
Weighing-----	54,276.46	—	54,276.46
Keewatin			
Inspection-----	8,833.99	1,020.72	9,854.71
Weighing-----	4,481.88	1,308.90	5,790.78
Saskatoon			
Inspection-----	42,367.69	638.22	43,005.91
Weighing-----	21,748.58	41.33	21,789.91
Moose Jaw			
Inspection-----	9,610.80	207.22	9,818.02
Weighing-----	5,081.26	389.60	5,470.86

**Table H-2—ACCRUED REVENUE, by Point and Division, Fiscal Year
ended March 31, 1966—Concluded**

Point and Division	Fees	Other Revenue (a)	Total
	\$	\$	\$
Medicine Hat			
Inspection	7,008.00	—	7,008.00
Weighing	20,209.32	825.38	21,034.70
Lethbridge			
Inspection	9,678.09	420.76	10,098.85
Weighing	1,317.53	—	1,317.53
Calgary			
Inspection	26,232.13	660.39	26,892.52
Weighing	27,001.66	381.40	27,383.06
Edmonton			
Inspection	16,893.80	233.81	17,127.61
Weighing	4,912.59	11.54	4,924.13
Vancouver			
Inspection	819,013.93	13,545.94	832,559.87
Weighing	412,510.71	1,130.38	413,641.09
Statistics	23,717.14	—	23,717.14
Victoria			
Inspection	49,380.35	484.37	49,864.72
Weighing	24,102.51	—	24,102.51
Prince Rupert			
Inspection	64,904.94	835.44	65,740.38
Weighing	32,220.02	—	32,220.02
Fort William			
Inspection	1,743,034.93	5,690.35	1,748,725.28
Weighing	849,872.49	1,657.58	851,530.07
Toronto			
Inspection	7,563.68	126.55	7,690.23
Chatham			
Inspection	65,685.75	1,707.57	67,393.32
Montreal			
Inspection	24,490.07	8,227.58	32,717.65
Statistics	19,554.22	—	19,554.22
Baie Comeau			
Inspection	3,604.00	2,188.94	5,792.94
Weighing	1,609.71	3,391.18	5,000.89
Totals	4,648,004.12	67,706.03	4,715,710.15

(a) Details in Table H-4.

Table H-3—Accrued Revenue and Net Expenditure, by Points and Branches, Fiscal Year ended March 31, 1966

	Inspection	Weighing	Appeal Tribunals	Statistics	Research Laboratory	Grain Standards Commit- tees	Adminis- tration	Executive Salaries of Commis- sioners	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$
REVENUE									
Winnipeg-----	43,205.92	24,601.12	2,202.00	75,249.08	—	—	17,650.00	—	162,908.12
Churchill-----	106,758.65	54,276.46	—	—	—	—	—	—	161,035.11
Keewatin-----	9,854.71	5,790.78	—	—	—	—	—	—	15,645.49
Saskatoon-----	43,005.91	21,789.91	—	—	—	—	—	—	64,795.82
Moose Jaw-----	9,818.02	5,470.86	—	—	—	—	—	—	15,288.88
Medicine Hat-----	7,008.00	21,034.70	—	—	—	—	—	—	28,042.70
Lethbridge-----	10,098.85	1,317.52	—	—	—	—	—	—	11,416.38
Calgary-----	26,892.52	27,383.06	—	—	—	—	—	—	54,275.58
Edmonton-----	17,127.61	4,924.13	—	—	—	—	—	—	22,051.74
Vancouver-----	832,559.87	413,641.09	—	23,717.14	—	—	—	—	1,269,918.10
Victoria-----	49,864.72	24,102.51	—	—	—	—	—	—	73,967.23
Prince Rupert-----	65,740.38	32,220.02	—	—	—	—	—	—	97,960.40
Fort William-----	1,748,725.28	851,530.07	—	—	—	—	—	—	2,600,255.35
Toronto-----	7,690.23	—	—	—	—	—	—	—	7,690.23
Chatham-----	67,387.32	—	6.00	—	—	—	—	—	67,393.32
Montreal-----	32,717.65	—	—	19,554.22	—	—	—	—	52,271.87
Baie Comeau-----	5,792.94	5,000.89	—	—	—	—	—	—	10,793.83
Totals-----	3,084,248.58	1,493,083.13	2,208.00	118,520.44	—	—	17,650.00	—	4,715,710.15

Table H-3—Accrued Revenue and Net Expenditure, by Points and Branches, Fiscal Year ended March 31, 1966—Concluded

	Inspection		Weighing		Appeal Tribunals		Statistics		Research Laboratory		Grain Standards Commit- tees		Adminis- tration		Executive, Salaries of Commis- sioners		Total	
	\$		\$		\$		\$		\$		\$		\$		\$		\$	
EXPENDITURE																		
Winnipeg-----	527,345.37		60,422.67		10,150.00		256,493.09		537,563.98		2,890.21		173,947.59		51,360.85		1,620,173.76	
Churchill-----	5,344.33		1,633.47		—		—		—		—		—		—		6,977.80	
Keewatin-----	4,636.48		7,226.56		—		—		—		—		—		—		11,863.04	
Saskatoon-----	53,289.78		39,070.00		—		—		—		—		20,860.50		—		113,220.28	
Moose Jaw-----	19,021.00		21,260.00		—		—		—		—		19,932.53		—		40,281.00	
Regina-----	—		—		—		—		—		—		—		—		19,932.53	
Medicine Hat-----	—		12,860.00		—		—		—		—		—		—		12,860.00	
Lethbridge-----	12,776.00		5,830.97		—		—		—		—		—		—		18,606.97	
Calgary-----	101,128.51		62,255.64		—		—		—		—		—		—		163,384.15	
Edmonton-----	104,456.67		20,282.00		—		—		—		—		22,246.35		—		146,985.02	
Vancouver-----	441,660.38		316,249.70		—		72,857.44		—		—		—		—		830,767.52	
Victoria-----	27,249.32		11,459.42		—		—		—		—		—		—		38,708.74	
Prince Rupert-----	23,226.58		12,993.13		—		—		—		—		—		—		36,219.71	
Fort William-----	1,074,566.65		903,630.95		—		91,365.72		—		—		—		—		2,069,563.32	
Toronto-----	12,545.00		—		—		—		—		—		—		—		12,545.00	
Chatham-----	67,676.37		12,016.70		—		25,852.75		—		—		—		—		67,676.37	
Montreal-----	280,890.76		6,547.82		—		—		—		—		—		—		318,760.21	
Bate Comeau-----	22,960.87		—		—		—		—		—		—		—		29,508.69	
Totals-----	2,778,774.07		1,493,739.03		10,150.00		446,569.00		537,563.98		2,890.21		236,986.97		51,360.85		5,558,034.11	

Table H-4—Summary of Operations by Divisions, Fiscal Year ended March 31, 1966

	Inspection	Weighing	Appeal Tribunals	Statistics	Research Laboratory	Grain Standards Commit- tees	Adminis- tration	Executive, Salaries of Commis- sioners	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$
REVENUE									
Fees-----	3,039,532.89	1,483,024.44	2,208.00	118,500.54	---	---	---	---	4,643,265.77
Overtime-----	14,200.57	10,028.69	---	---	---	---	---	---	24,229.26
Express Charges-----	4,602.75	---	---	---	---	---	---	---	4,602.75
Samples Sold-----	25,831.37	---	---	---	---	---	---	---	25,831.37
Refund of Previous Year's Expenditure-----	81.00	30.00	---	20.00	---	---	17,650.00	---	131.00
Miscellaneous-----	---	---	---	---	---	---	---	---	17,650.00
Totals-----	3,084,248.58	1,493,083.13	2,208.00	118,520.44	---	---	17,650.00	---	4,715,710.15
EXPENDITURE									
Salaries-----	2,473,726.18	1,404,310.79	10,150.00	355,303.60	355,788.85	---	174,001.00	51,360.85	4,824,731.27
Rent-----	96,806.59	10,961.89	---	39,036.36	44,467.47	---	19,742.61	---	211,014.92
Travel-----	93,959.37	47,939.65	---	3,375.52	11,447.14	1,870.21	28,149.72	---	186,741.61
Purchase of Equipment-----	29,785.00	77.00	---	157.88	62,349.00	---	194.15	---	92,563.03
General Expenses-----	67,982.93	26,798.65	---	16,184.64	54,735.52	1,020.00	12,902.91	---	179,624.65
Printing, Stationery and Office Equipment-----	16,514.00	3,651.05	---	32,511.00	8,776.00	---	1,906.58	---	63,358.63
Totals-----	2,778,774.07	1,493,739.03	10,150.00	446,569.00	537,563.98	2,890.21	236,986.97	51,360.85	5,558,034.11

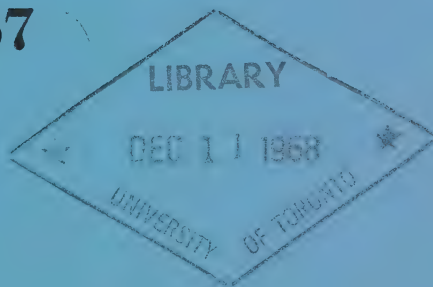
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CANADA

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**Board of
Grain Commissioners
(for Canada)**

ANNUAL REPORT
(1967)



CANADA DEPARTMENT OF AGRICULTURE, OTTAWA

Minister:
Hon. J. J. Greene, M.P.

Deputy Minister:
S. B. Williams

Price 50 cents



CANADA

Board of Grain Commissioners for Canada

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BOARD OF GRAIN COMMISSIONERS FOR CANADA

Winnipeg, Manitoba,
January 31, 1968.

The Honorable J. J. Greene, M.P.,
Minister of Agriculture,
OTTAWA, Canada.

Sir:

We are pleased to submit the 1967 Report of the Board of Grain Commissioners for Canada, in compliance with Section 23 of the Canada Grain Act.

The report contains a review of the Board's functions and principal activities during the year, together with information and statistics relating to quality and volume of grain handled through the Canadian licensed elevator system during the 1966-67 crop year, and a review of the quality of 1967 grain crops.

Respectfully submitted,

Frank Hamilton,
Chief Commissioner

A. V. Svoboda,
Commissioner

C. L. Shuttleworth,
Commissioner

W. J. MacLeod,
Secretary

V. Martens,
Assistant Secretary

Board of Grain Commissioners 1967 Annual Report

INTRODUCTION

The Board of Grain Commissioners is responsible for administering the Canada Grain Act and has general supervision over grain handling in Canada. It has the power to make regulations and orders which are consistent with the Act.

The Board's operations are divided into six main functions. The Executive Offices deal with general administrative matters, provide financial and personnel services, and include the offices of the Assistant Commissioners. The Inspection Division, which is the largest of the operational divisions, provides official inspection and grading of grain at various points across Canada, particularly grain received at and shipped from terminal elevators and grain loaded to vessels for export at eastern elevators. The Weighing Division is responsible for official weighing of grain at terminal and mill elevators, annual weighovers of grain stocks in terminal and eastern elevators, and inspection and certification of scales in terminal and eastern elevators. The Statistics Division collects, compiles and publishes basic statistics relating to handling and storage of grain within the licensed elevator system. Other responsibilities include issuing of licences to elevator operators and grain dealers, supervision of bonding of licensees, and registration of warehouse receipts issued by managers of terminal and eastern elevators. The Division is making increasing use of electronic data processing and telecommunication equipment in its work. The Research Laboratory carries on a program of research related to the quality of cereal grains and oil seeds, conducts quality surveys of current crops and shipments, and participates in testing of new varieties in collaboration with plant breeders and the Board's Inspection Division. The Canadian Government Elevators system, which is managed, operated and maintained by the Board, is comprised of six terminal grain elevators located in Western Canada. One of the elevators is situated at the port of Prince Rupert, B.C., and handles grain for loading directly to ocean vessels.

In addition, the Board constitutes Grain Appeal Tribunals and Committees on Western and Eastern Grain Standards. It also has responsibility for collecting the one per cent levy under the Prairie Farm Assistance Act and for setting maximum lake grain freight rates when considered advisable, under the provisions of the Inland Water Freight Rates Act.

The format of the Board's report for 1967 is quite different from that of reports for previous years in that the information is arranged according to subject matter rather than according to the functions and

activities of the various divisions within the organization. Certain annual statistical tables considered to be of limited interest have been discontinued, while others have been revised or combined.

This report commences with detailed reviews of the amount and quality of grain moved during the 1966-67 crop year, the quality of 1967 grain crops and studies of new varieties of grain. The second section deals with the Board's supervision of the handling of grain through the elevator system. This includes such matters as licensing and bonding, registration of warehouse receipts, statistics, weighovers, inspection of elevators and equipment, and investigation of complaints. The third section gives information in regard to research programs and various information, technical, inspection and statistical services. Section Four deals with personnel administration including such topics as staff training.

A series of appendices to the report includes tables which provide statistical information relating to grain handlings and quality. Information is also given with respect to such matters as amendments to the Canada Grain Regulations, Committees on Grain Standards, principal Board publications, and revenue and expenditure. The final item in the series is a chart showing the Board's organization and distribution of staff.

SECTION 1 — GRAIN PRODUCTION, QUALITY AND DISPOSITION

Grain Supplies and Disposition, 1966-67

Grain statistics released for the 1966-67 crop year indicated another period of excellent handlings and, although only a few new records were achieved, in many instances the volumes attained represent close records.

Total stocks of Canadian wheat, oats, barley, rye, flaxseed and rapeseed carried over into the 1966-67 crop year were estimated at 669.9 million bushels, with approximately 33% of this figure held in on-farm storage. The 1966 crop included a record-breaking 827.3 million bushels of wheat plus 374.7 of oats, 301.2 of barley, 17.2 of rye, 22.0 of flaxseed and 25.8 millions of rapeseed. The inward carry-over, augmented by the 1966 production of 1,568.2 million bushels, provided a total available supply of approximately 2,240 million bushels of the six principal grains and oilseeds for export or domestic usage.

Farmers delivered a combined total of 842.7 million bushels of the principal Canadian grains and oilseeds to the licensed elevator system — a figure exceeded only by the peak 851.2 million bushels recorded in the 1952-53 crop year. Marketings of both wheat (638.2 million bushels) and rapeseed (20.8 million bushels) established new highs for these grains.

Overseas clearances of the six major grains totalled 569.5 million bushels — a volume surpassed only by the record 1965-66 and 1963-64 export movements. Bulk wheat exports to overseas destinations, amounting to 482.6 million bushels, were one of the highest on record.

The 1966-67 commercial disappearance consisted of export shipments of bulk grain and wheat flour amounting to 612.9 million bushels, plus an additional 781.1 million bushels utilized within Canada to meet requirements for feed, seed, human food and industrial use. This disposition resulted in July 31, 1967, year-end stock of 844.2 million bushels — the highest carry-over since July 31, 1958 — with some 43% of this total representing grain held in on-farm storage.

Grades and Quality of Grain Marketed in 1966-67

This subsection of the report gives a brief summary of the grades and quality of Canada's various cereal grains and oil seeds

which entered the domestic and world market during the last complete crop year. Each grain is dealt with individually. For most cereals and oil seeds the grain marketed during a given crop year represents some new crop material together with unknown amounts of grain from several previous harvests. Because of this, no mention will be made in this section of the report about specific growing conditions or harvest conditions prevailing in the crop year under review. Mention will be made only of specific conditions reflected in the grades of each grain. A brief summary of the quality of each grain is given.

Hard Red Spring Wheat. Light frost damage, immaturity, smudge and moderate weather damage (the latter in wheats from crops prior to 1966) were degrading factors. The grain moved during the year was for the most part high in grade — over 70% of the carlots qualified for grade No. 1, 2, or 3 Northern, compared with only 50% in the previous crop year. Very little grain required drying at the terminal elevators. Protein levels for each of the grades of red spring wheat were lower this year than last; for the grades No. 1 to No. 4 Northern, the average value for protein was 13.4%. The baking strength of the wheats in the top three grades was somewhat lower this year, but the No. 4 Northern grade was slightly stronger.

Export shipments of wheat from Atlantic coast ports were slightly higher in protein content and in baking strength than Pacific coast exports. The relatively small volume of wheat exported from Churchill was generally stronger, grade for grade, than the Atlantic shipments.

Amber Durum Wheat. The proportion of the durum wheat entering the top grades in the 1966-67 crop year was not as high as in the case of the spring wheats. Nearly 60% of the durum wheat movement entered the top three grades. The evidence of ergot, a serious degrading factor when present, was low in this year's durum movement. Test weight and 1000 kernel weight were higher this year than last, but protein content was generally lower. Macaroni pigment levels for some grades were slightly lower this year, but macaroni color for each grade (except No. 5 C.W.) was virtually the same this year as in the previous crop year.

Barley. The proportion of barley entering the malting grades in 1966-67 crop year was slightly higher than in the previous crop year — about 21% as against 16%. There was therefore a good supply of Six-Row and Two-Row barley of good malting quality. In marked contrast to the situation in the previous crop year, there were few problems in germination dormancy and water sensitivity; malting

quality was higher than for several years. The new smut-resistant variety, Conquest, appeared in shipments for the first time and made up 45% of the 2 C.W. Six-Row grade, 22.5% of the 3 C.W. Six-Row grade, and 9% of all deliveries.

Flaxseed. About 90% of the year's flax movement entered the No. 1 Canada Western grade. The oil content of flax this year was the same as last year, averaging 43.0%, but the protein content of the linseed meal was higher this year.

Rapeseed. Only about 3% of rapeseed shipments were graded below No. 1 Canada Rapeseed, but there was a noticeable increase in the amount of wild mustard seed in producers' deliveries. To preserve the quality of this valuable special crop, the Board reduced the tolerance of such inconspicuous seeds in statutory grades to 5% effective August 1, 1967.

Mustard Seed. Inseparable weed seeds were again the most serious degrading factor in domestic mustard seed which otherwise was of fair average quality.

Oats. The supply of milling oats was slightly better than that in the previous crop year, with 32.2% of shipments grading No. 3 Canada Western or higher.

Rye. Rye quality was better than average with less smudge damage, no sprouted and an average ergot incidence.

Peas. Century, the predominant variety of dry peas, showed some tendency to more irregular size, indicating a need for new and pedigreed seed. Soil tag and light weather damage were the main factors in grades. All available supplies were readily disposed of and there was a very small carry-over after 1967 seeding.

Eastern Canadian Grains. Of 2,062 carlots of white winter wheat inspected, 72% graded No. 1 or No. 2 Canada Eastern and 20% off grade "Tough." Approximately 83% of all barley inspected qualified for malting and pearling grades, and only 20 carlots or 6% were "Tough." Carlots of corn inspected totalled 3,982, and a high percentage of these showed moderate to severe discoloration from "Red Stripe." About 80% of carlots were in extra dry and straight grades No. 3 Canada Eastern Yellow and higher, and 17.7% were off grade account high moisture. Of a total of 2,190 carlots of soybeans inspected, 2,092 graded No. 1 or No. 2 Canada Yellow, indicating the generally good quality of this crop. Dry beans were about average quality, with less severe damage but more soil tag than normal. Approximately 72% of carlots inspected were No. 1 Canada Eastern quality.

Growing Conditions, Grades and Quality, 1967 Crop

Soil moisture reserves were excellent in virtually all areas of Western Canada in the spring of 1967. Late season snowfall, combined with subnormal temperatures slowed surface drying of the soil and delayed seeding, particularly in the heavier soils of central Alberta and eastern Manitoba. Germination and crop emergence was good but extremely dry conditions prevailed in almost all areas during most of the growing season. Crops on stubble land were saved by a light to moderate general rain in late July and early August. Harvest weather was the finest for many years and permitted even the latest crops to mature.

Red Spring Wheat. The 1967 Western Canadian hard red spring wheat crop amounted to 553.4 million bushels, considerably less than the previous year's record crop of 778.6. The distribution between the No. 1, No. 2 and No. 3 Manitoba Northern was estimated to be as follows: 32%, 51% and 12%. The variety Manitou performed exceptionally well, and in areas where it replaced Selkirk, it greatly improved sample appearance because of its better maturity and uniformity. Average protein content for the 1967 hard red spring wheat crop was estimated to be 13.8%, significantly higher than the 13.2% level in the 1966 crop, and slightly higher than the long term average figure of 13.6% for all spring wheat crops from 1927 to 1966.

The protein content is higher in all grades of the new crop spring wheat from the western prairies (Alberta and western Saskatchewan), and in the No. 1 and No. 3 Northern grades from the eastern prairies (Manitoba and eastern Saskatchewan), than it was in spring wheat cargo exports during the fourth quarter of 1966-67. Test weight is lower for the No. 1 and No. 2 Northern wheats for both the eastern and western portions of the prairies. Flour enzyme levels in the new crop are significantly lower than those for recent export shipments. Baking strength of the grades of the new crop wheat is generally higher than that of the corresponding grade of recent shipments, reflecting the higher protein levels. Wheat from the eastern prairies is slightly stronger than that from the western prairies.

Amber Durum Wheat. The 1967 Western Canadian amber durum wheat crop, estimated to be 20.6 million bushels, was predominantly high in grade with only small amounts grading lower than No. 3 C.W. Due to the dry growing season the incidence of ergot is lower than in any of the last 10 years. Protein content of the durum crop averaged 13.8%, as compared to 13.2% in the 1966 crop.

The protein content in the new crop durum wheat for all grades except No. 3 C.W. is about the same or slightly higher than that of the corresponding grades of durum wheat cargoes exported during the fourth quarter of the 1966-67 crop. Test weight values are relatively constant across the grades of the new crop durum wheats, and semolina yields compare favorably with those of recent cargo shipments (except for No. 4 C.W.). Macaroni color is slightly below the levels for current shipments for all grades except No. 3 C.W.

Barley. The 1967 barley crop was grown under severe drought conditions in most areas. The widespread use of fertilizer was credited with helping Western Canadian crops to withstand the drought by more efficient utilization of available soil moisture. Harvest weather was ideal and the barley crop was harvested in excellent condition. There was virtually no weather stain or field damage of any kind but the dry harvest conditions contributed to a somewhat larger than usual incidence of peeled and broken kernels resulting from mechanical handling. Production of barley in Western Canada in 1967 was estimated to amount to 230 million bushels, and the proportion of the crop entering the top grades is higher than for many years. While the supply of Six-Row barley is sufficient for both domestic and export requirements, the demand for Two-Row barley will likely exceed the supply. Comparisons with the 1966 crop show that all grades of new-crop barley are higher in test weight this year. The percentage of plump barley is higher for all grades except No. 3 C.W. Two-Row and No. 1 Feed. Kernel weight and nitrogen content values for the plump barley of the various grades are similar to those of the previous crop. Enzymatic activity levels of barleys and the malts are good and compare favorably with those of the previous crop. The new variety Conquest was widely grown in Manitoba and Saskatchewan and its field performance was good. Its performance in commercial malting last year was excellent.

Flaxseed. Flaxseed production in Western Canada in 1967, 9.8 million bushels, was the lowest since 1953. The crop was remarkably free from damage of any kind and will almost entirely qualify for the grade No. 1 C.W. The oil content of new-crop flaxseed averaged 42.2%, almost 1 percent lower than in the previous year.

Rapeseed. For the fourth successive year, rapeseed production in Western Canada set a new record. Production in 1967 was estimated to be 26.5 million bushels. The main degrading factor this year is admixture of wild mustard and other inseparable seeds; nevertheless, the bulk of the crop is expected to qualify for the No. 1 grade. The oil content of the 1967 crop of rapeseed averaged 44.0%, down slightly

from the level in the 1966 crop. The protein content of the oil-free meal was, on the average, 2 percent higher this year (41.3%).

Oats. Oats are also better than average quality, containing a minimum of damage and very little weathering. There is some second growth green, but test weight is generally better than average.

Rye. The quality of 1967-crop rye is exceptionally high; there is very little smudge and less ergot than for many years. Test weight is only slightly lower than in 1966.

Buckwheat. The domestic buckwheat crop, which occupied twice the acreage in Manitoba that it did in 1966, yielded poorly due to the dry growing season. As a result, export demand has far exceeded supply and made it necessary for some exporters to turn to the United States for supplies.

Peas. Dry peas are of moderately good quality, showing slightly more green and immature peas than normal. Production and supply are down from 1966 mainly due to a 35% reduction in acreage in Manitoba.

Eastern Winter Wheat. For the fourth successive year, the Research Laboratory carried out a survey of the protein content of the new crop of Eastern White Winter wheat. The Inspection Division office in Chatham collected 500 samples of 1967-crop winter wheat representing 75 stations in 9 counties in southwestern Ontario. The mean protein content for these samples was 10.2% as compared with the value of 9.7% for the 1966 crop. About 80% of the 1967 survey samples graded No. 2 Canada Eastern Winter wheat.

Meetings of Committees on Grain Standards

As provided for in Section 25 of the Canada Grain Act, the Board constituted Committees on Western and Eastern Grain Standards. Personnel of these Committees are listed in Appendix B.

The Committee on Western Grain Standards met in Winnipeg on October 19, 1967. The members received full reports on the condition, grade and quality of crops produced in 1967. The Chief Grain Inspector collected over 1,000 two-bushel bags of grain from all of the grain-producing areas of Western Canada, and from this material prepared and presented a total of 63 tentative standard and standard export samples to the Committee; of these 44 were established as standard samples of statutory grades, 6 as standard samples of commercial grades, and 13 as standard export samples. As part of this phase of the work, the Research Laboratory carried out detailed quality tests

on the 1967 Standard Export samples of hard red spring wheat, Garnet wheat, and amber durum wheat. Detailed tests were also made on the 1967 Standard samples of hard red spring wheat, Garnet wheat, barley, flax and rapeseed.

Also, the Committee confirmed a new commercial grade of Domestic Mustard Seed, No. 4 Canada Western, effective August 1, 1967; withdrew authority, effective October 19, 1967, for use of the commercial grade definitions for No. 5 Special and No. 6 Special Wheat; and, effective August 1, 1968, amended the commercial grade definition for No. 3 Canada Western Two-Row Barley.

The Committee on Eastern Grain Standards held meetings in London, Ontario, on August 29, 1967, and in Montreal, Quebec, on October 26, 1967. At the first meeting samples of wheat, oats, barley and rye were established as standard samples of various Statutory Grades and Commercial Grades. At the second meeting, the Committee established standard samples for Statutory Grades of corn, dry beans, soybeans, domestic buckwheat and flaxseed. The Committee also amended the commercial grade definition for No. 3 Canada Eastern Two-Row Barley, effective August 1, 1968.

Variety Testing

The Inspection Division continued its program of co-operation and assistance to plant breeders at agricultural research stations and universities throughout Canada. More than 3,000 samples representing new varieties of wheat and barley at various stages of development were received, examined and reported on, directly to the plant breeders concerned. These reports on kernel characteristics and sample appearance through all stages of new variety development are necessary if undesirable types are to be eliminated at the earliest possible stage in the program.

The 1967 series of Co-operative Tests included 69 new varieties of wheat and barley. Detailed descriptions of kernel characteristics and grading for each of these were provided for the Associate Committee on Grain Research of the National Research Council.

Close co-operation was maintained throughout 1967 with other divisions of the Department. The Board provided a service to producers, their organizations, and the grain trade, by identifying varieties and analyzing samples of wheat and barley to assist in the control of unlicensed and inferior varieties of these grains.

The Research Laboratory carries out detailed quality tests on the new varieties of hard red spring and amber durum wheats and

malting barleys that are included in the Co-operative Tests mentioned above. The Laboratory's work with these varieties is, however, done in January and early February on the materials of the previous crop. Included in these tests in 1967 were 25 varieties of hard red spring wheat, 20 varieties of durum wheat, and 40 varieties of barley, all grown in the summer of 1966.

Detailed milling and baking tests were carried out on 20 spring wheat varieties grown in the Uniform Quality Nursery. Similarly, detailed milling and macaroni-making tests were carried out on 25 amber durum wheat varieties grown by the Canada Department of Agriculture Research Station, Winnipeg, in a test designed to select varieties suitable for entry into the Durum Co-operative Test. The Laboratory again participated in the annual program of wheat quality tests sponsored by the Crop Quality Council of the United States. Twenty-eight samples, representing six varieties of spring wheat, and two varieties of winter wheat grown at a number of stations in the north central and northwest United States, were tested this year.

SECTION 2 — DOCUMENTATION AND ELEVATOR OPERATIONS

Grain Documentation

Statistics. The Board requires from all licensees certain records and periodical reports of stocks and handlings which are considered necessary for effective supervision and control. From returns submitted, the Statistics Division compiles and publishes basic statistics relating to the storage and movement of grain within the Canadian elevator system. A number of tables pertaining to the 1966-67 crop year are to be found in Appendix A, and a list of the principal statistical releases is included in Appendix C.

As the principal source of Canadian grain storage and handling statistics, the Division worked closely with the Canadian Wheat Board, the Agricultural Division of the Dominion Bureau of Statistics, other federal and provincial government offices, and internationally with the Commonwealth Economic Committee, the Food and Agriculture Organization of the United Nations, the International Wheat Council and the Production and Marketing Branch of the United States Department of Agriculture.

Licensing and Bonding. The Canada Grain Act establishes the terms under which any elevator shall be licensed by the Board for the receipt or discharge of any western grain. The Act also specifies the conditions by which grain dealers, track buyers and grain commission merchants must be licensed in order to engage in contracts dealing with western grain by grade name. Licensees must be secured by bond or otherwise in the performance of all obligations imposed upon them by the Act.

The number of licences issued for country, terminal, mill and eastern elevators totalled 5,130 at August 1, 1967, compared with 5,184 a year ago. The decrease in number of licences issued was most pronounced in the public country elevator sector. The total licensed storage capacity of 682,187,010 bushels at August 1, 1967, represented an increase of 5.4 million bushels in capacity since August 1, 1966. The major change in the storage pattern also occurred in the public country elevator sector, where the capacity increased by 5.2 million to 389.7 million bushels. These statistics reflect the current policy of replacing obsolete country elevators with a smaller number of new structures having a substantially larger capacity. A significant increase in eastern elevator capacity also occurred during the latter part of the calendar year under review, with the licensing on Decem-

ber 4, 1967, of a new 10-million bushel facility at Port Cartier, Quebec. In addition to the licensed elevators, there were also licensed at August 1, 1967, 13 track buyers and 17 commission merchants.

Guarantee bonds in the amount of \$33,278,485 executed by 15 approved surety companies, were deposited with the Board as security. In addition, negotiable government bonds in the amount of \$1,000 were deposited by one licensee in lieu of the usual form of surety bond.

The Statistics Division continued its responsibility for scrutiny of insurance coverage required to be maintained by elevator licensees on all grain stocks in licensed premises.

Registration. Operators or managers of semi-public terminal and eastern elevators are required to issue warehouse receipts or transfer receipts for all grain taken into store. Such warehouse receipts and transfer receipts must be registered with the Board as to grade and quantity at the time of issue, and surrendered to the Board for registration for cancellation when the grain which they represent has been shipped out. Upon registration by the Board the warehouse receipts become negotiable documents and are used as collateral by the various grain companies in financing the movement of the grain. Registration service is provided at the headquarters office of the Statistics Division in Winnipeg and at suboffices in Vancouver and Montreal.

Total bushels registered and registered for cancellation, reflected slight declines in the Western Division of 0.9 million and 17.7 million bushels respectively, compared to totals for the 1965-66 crop year. At the same time, increases of 199.3 million and 189.2 million bushels respectively, were evident for these two categories when compared with the previous 10-year average. Statistics for the Eastern Division indicated decreases of 40.9 million and 82.2 million bushels respectively, compared with those for the 1965-66 crop year, but these figures were still 104.8 million and 82.6 million bushels in excess of similar totals shown for the previous 10-year average.

New Procedures. Documents and reports are received by the Statistics Division from other Board divisions, the Canadian Wheat Board, the grain companies, and other organizations associated with the grain trade and form the core of the Division's operations. Jointly with the Canadian Wheat Board, the Division has endeavored to guide and control the integration of electronic data processing systems within the Canadian grain trade. It is hoped that this leadership will culminate in the establishment of a common machine language

and forms design that will facilitate the interchange of punched cards and other derived reports. This integrated grain information flow system would then permit an immediate evaluation of country, in transit, and terminal inventories and thereby enable the grain transportation industry to co-ordinate the loading, movement and unloading of grain which would minimize paper work and make for a more efficient operation.

A further extension in the Division's combined telecommunication computer-oriented program of records maintenance and data transfer designed to facilitate grain documentation and control procedures, was undertaken in 1967 with the provision of service to the National Harbours Board elevator located at Churchill. The feasibility study initiated during the previous year regarding the relative cost advantage of this type of system between the Winnipeg and Fort William offices was completed, and a decision was reached to implement this new method of data transfer early in 1968.

Commencing with this crop year, records of registration data were further integrated with those produced by the Board's computer by eliminating the former procedure of maintaining a record of individual outstanding warehouse receipts for the Lakehead, Interior and Prince Rupert elevators, in favor of a monthly statement of outstanding warehouse receipts, by individual grade. Records for the Vancouver-Victoria group as well as for all elevators in the Eastern Division, continued to be maintained on the usual basis during the 1966-67 crop year.

Country Elevators

Inspection of Elevators. The Board's four Assistant Commissioners — located at Winnipeg, Saskatoon, Regina and Edmonton — enable the Board to keep in close touch with the operation of licensed country elevators in the Prairie Provinces.

During the year 1967, the Assistant Commissioners inspected 601 elevators in Manitoba, 771 in northern Saskatchewan, 532 in southern Saskatchewan, and 675 in Alberta — a total of 2,579. This inspection included checks on scales, sieves, moisture meters and certain other equipment; deductions for shrinkage, and Prairie Farm Assistance Act Levy; and posting of current Board regulations applying to country elevators.

In addition to this regular program of inspections, the Assistant Commissioners assisted in the investigation of producers' complaints and of reported infractions of the Board's regulations and orders.

They also received and handled numerous inquiries from producers and elevator operators on various matters relating to country elevator operations.

Weigh-overs. Stocks of grain in country elevators are weighed over from time to time by officials of the elevator company concerned. Detailed reports of these weigh-overs are submitted to the Board for scrutiny in their analysis of country elevator operations.

The results of this year's country elevator weigh-overs conducted by the various grain companies have been summarized in the following table. The relative patterns of overage and shortage percentages indicate little change from those of the preceding year.

Elevators Reporting	1966-67	1965-66
Shortages	460	407
Neither Overages nor Shortages	35	24
Overages of less than .25%	860	802
Overages of .25% to .50%	517	401
Overages over .50%	187	124
Total number of elevators weighed over	2,059	1,758

The Board reviewed the details of the weigh-overs and other related records and when necessary, held discussions with company management. The Assistant Commissioners were given authority to deal directly with elevator agents and superintendents in cases where excessive overages or shortages had been reported.

Terminal, Mill and Eastern Elevators

Services. All grain received at and shipped from the 45 licensed terminal elevators in the Western Division is sampled and graded by staff of the Inspection Division, and weighed under supervision of the Board's weighing staff. Inspection and weighing services are also provided at 27 mill elevators in the Western Division.

At licensed eastern elevators located at St. Lawrence River and Maritime ports grain loaded into vessels for export is sampled, inspected and certified. Other sampling, inspection and weighing services in the Eastern Division are provided only on request. The inspection unit at Chatham, Ontario, samples and grades a considerable volume of eastern-grown grain for the grain trade in that area.

Information as to quantity of grain inspected and weighed during the 1966-67 crop year will be found in Appendix A.

Weigh-overs. Whenever possible, official weigh-overs are conducted annually at licensed terminal and eastern elevators by groups of

employees of the Weighing and Inspection Divisions. While a weigh-over is in progress, all normal elevator operations cease, and the grain handling equipment and stocks of grain remain under the full control of the weigh-over crew. The contents of every storage bin are weighed, sampled for verification of grade and recorded. This work may take from a few days to several weeks, depending on the size of the elevator and the quantity and type of grain in store. The Statistics Division compiles totals of outstanding warehouse receipts and handlings by grain and grade, obtains statements of stocks on hand from the Weighing Division and summarizes the results of each weigh-over for review by the Board. The purpose of these audits is to enable the Board to determine whether the grain-handling operations at the elevator have resulted in any excessive overage or shortage in the various kinds and grades of grain.

During the 1966-67 crop year, 21 terminal and 22 eastern elevators were weighed over. Deferments into the following crop year were made at 10 terminal elevators at the Lakehead, 7 terminal elevators at other points, and at 9 eastern elevators. The Board found it necessary to grant these deferments to avoid delaying the handling and loading of grain required to meet export orders. However, it was possible to carry out 5 of these deferred weigh-overs before the end of December, 1967.

Inspection of Equipment. All automatic samplers, scales and equipment for transferring grain to scales on receipt, and from scales for shipment in all licensed terminal elevators and serviced mill and eastern elevators were inspected periodically. In accordance with the special arrangement with the Standards Branch of the Department of Trade and Commerce, all scales in licensed terminal and eastern elevators were inspected, verified and "Certified" by the Board's scale inspectors acting as inspectors under the Weights and Measures Act. Special inspections were made when any doubt arose as to the accuracy of a scale.

Plans and specifications for new elevator facilities and alterations to elevators and grain-handling equipment were examined before permission was given for commencement of work by elevator managers. When completed, new facilities and installations were inspected by officials of the Inspection and Weighing Divisions to ensure that no condition existed which might affect the efficiency of sampling or the accuracy of the weighing of grain received and shipped.

New Elevators and Equipment. The newly constructed eastern elevator at Port Cartier, Quebec, capacity 10.5 million bushels, commenced operations in the latter part of 1967. This elevator is designed

to permit control of the major grain-handling equipment from a central panel. The scales are of a conventional type modified to operate automatically with load-cell electronic devices.

A new terminal elevator at Vancouver, capacity 5.5 million bushels was almost completed by the end of the year and will be in full operation early in 1968. This addition to terminal facilities at the Pacific Coast will assist considerably in expediting the export movement of grain. The elevator is equipped with automatic scales similar to those at Port Cartier.

Information with respect to construction of a new annex at the Prince Rupert Elevator will be found under the heading — "Canadian Government Elevators."

Senior officials of the Inspection and Weighing Divisions examine plans for new elevator construction before the Board gives permission for work to begin. They follow up by inspecting and approving storage bins, scales and other equipment installations before licences are issued to the elevator managers.

It is anticipated that in the near future the managers of some terminal elevators at both the Lakehead and the Pacific Coast will commence a program of modification of manual scales to permit automatic control and operation. As a result of the increasing number of terminal elevators and the new developments in scale equipment, the Weighing Division has added a scale technician to its staff.

A number of terminal elevators have recently been equipped with high-speed, sample transport systems. This equipment is used to expedite the movement of grain samples from the sampling points to the inspection offices located at the elevators and is of considerable assistance to both the elevator operators and Inspection Division staff. Further such installations are expected during the next year.

Survey of Elevators. During the latter part of 1967 a committee of Board officials initiated a special detailed study of all licensed terminal, mill and eastern elevators in Canada (about 97 in number located from coast to coast), with a view to achieving uniformity in working conditions for Board of Grain Commissioners' operational inspection and weighing staffs (about 600), located at these elevators. Other purposes of the study are to review the Board's requirements for plans of new elevators, and for alterations and modifications to existing structures and equipment; and to evaluate the economic impact of modifications to elevators.

Canadian Government Elevators

In accordance with Section 166 of the Canada Grain Act and Order-in-Council P.C. 1372 of August 19, 1925, the Board manages and operates five interior terminal elevators at Moose Jaw, Saskatoon, Calgary, Edmonton and Lethbridge, and one terminal elevator at Prince Rupert.

Handlings. During the crop year 1966-67, total receipts were 26.3 million bushels. This level was surpassed only in 1952-53 when 27.6 million bushels were received. Wheat was the principal grain handled — almost 23 million bushels. Both the Moose Jaw and Saskatoon elevators were filled with wheat, and the Prince Rupert elevator handled 11 million bushels for export to Russia and China.

Other significant volumes handled were 1.25 million bushels of barley at Calgary and over 750,000 bushels of mustard seed at Calgary and Edmonton combined. There was a sharp decline in the quantities of rapeseed moved through these elevators, compared with the previous year.

Total shipments were 14.4 million bushels, leaving stocks on hand at the year-end at the highest level since 1955 — almost 15 million bushels.

Receipts and shipments at the various elevators were as follows:

Elevator	Capacity	Stocks		Net shipments	Stocks
		August 1, 1966	Net receipts		July 31, 1967
thousands of bushels					
Moose Jaw	5,500	475	5,224	479	5,220
Saskatoon	5,500	499	4,932	90	5,341
Calgary	2,500	820	2,695	1,706	1,809
Edmonton	2,350	417	1,308	955	770
Lethbridge	1,250	102	944	54	992
Prince Rupert	1,250	256	11,178	11,121	313
Totals	18,350	2,569	26,281	14,405	14,445

Charges. Generally, during the 1966-67 crop year, charges were the maximum permitted under the Canada Grain Regulations. However, the rate for storage after the first five days on wheat, oats and barley at the interior elevators was 1/45c per bushel per day instead of the maximum allowable rate of 1/30c.

New Annex at Prince Rupert. In April, 1967, the Board was authorized to proceed with construction of the new 1.0 million bushel capacity annex for which plans had previously been prepared. Work commenced during the summer of 1967 and is progressing very

satisfactorily and on schedule. It is expected that the project will be completed by the latter part of 1968. Major renovation of the electrical substation equipment has been carried out in conjunction with the construction of the new annex.

Maintenance. The Repair and Reconstruction Division carried out major roof repairs at the Saskatoon and Prince Rupert elevators. At the Edmonton elevator the automatic dumper controls were renewed, and at Lethbridge the electrical distribution system was modernized. Because of the continuing maintenance program since the organization of the Repair and Reconstruction Division in 1958, all elevators are now in good condition.

Complaints and Inquiries

Producers' Complaints. During 1967, the Board and the Assistant Commissioners investigated six written complaints with respect to producer transactions with operators of licensed country elevators. In five of these cases, satisfactory settlements were effected between the parties concerned, and in the remaining case, the Board found that there were no grounds for the complaint.

In addition, the Assistant Commissioners dealt with a variety of informal complaints and when necessary, interviewed elevator agents and local superintendents to advise on correct procedure.

Cargo Shortage Complaints. The Board received a total of 19 complaints with respect to excessive shortages reported on vessel shipments unloaded at Eastern Canadian and U.S. ports. With one exception these shipments originated at Fort William and Port Arthur, and the Chief Weighmaster arranged for senior members of his staff to investigate the weighing and loading of the grain at the terminal elevators concerned. In cases where the shipments were unloaded at licensed eastern elevators, an official of the Weighing Division examined records and interviewed elevator personnel. The Chief Weighmaster reported his findings to the Board for review and forwarding to the complainants. In four cases the operator of the unloading elevator adjusted the shortage with the shipper of the grain, but in the remaining instances no cause could be found for the reported discrepancies in weights.

In addition, 15 complaints were received with respect to outturn weights reported from overseas destinations. Investigations were conducted into the weighing of the shipments at the loading elevators in Canada and reports were forwarded to the complainants. The Board also reviewed information supplied by the complainants with respect to unload procedures and equipment at the overseas ports.

Overseas Quality Complaints. A total of 12 complaints were received with respect to some aspect of the quality of grain shipped to overseas destinations. Thorough investigations were carried out by the Inspection Division or the Research Laboratory, depending on the nature of the complaint. Official samples taken from the shipments at the time of loading were studied and subjected to special tests. Where possible, comparisons were made with samples taken by the importers at the time of unloading overseas. Detailed reports of the Board's investigations were sent to complainants for their information.

Prosecutions and Penalties. During 1967, at the request of the Board, the R.C.M.P. filed charges in court in connection with an alleged breach of Section 74 of the Canada Grain Regulations relating to delivery of mercurial treated grain to a licensed country elevator, and a conviction was obtained. Several other cases of this nature were investigated but there was insufficient evidence to warrant prosecution.

In another area of control, penalties totalling \$1,600 were levied and collected by the Board in connection with breaches of a Board order respecting carload shipments of high moisture grain.

SECTION 3 — RESEARCH, INFORMATION AND OTHER SERVICES

Research

Laboratory Research. The Laboratory maintains an active program of basic and applied research aimed at a better understanding of the chemistry associated with quality in cereal grains. At the present time, a considerable portion of the research effort is devoted to studies of enzyme systems in various cereals. Alpha-amylase has been isolated from hard red spring wheat, and the purified enzyme is now being used in detailed chemical, baking and rheological tests to determine its characteristics. Beta-amylase has also been isolated from hard red spring wheat.

Studies of amylase systems in barley have focused on the changes in these enzymes which occur during the milling process. The development of beta-amylase activity has been traced from barley through to the finished malt. This work has demonstrated that malt beta-amylases differ from those in barley.

Research on durum wheat has focused in part on the lipoxidase enzyme system, and in part on a detailed attempt to relate cooking quality to gluten characteristics. Results of this study will find practical application in the assessment of the quality of plant breeders' varieties of durum wheat. "Starch damage" is a topic that is currently of great interest to millers and bakers in many lands. Work in the Laboratory has led to the development of a relatively simple colorimetric method for determining the amount of "starch damage" in flours. In addition, milling research studies are focusing on the mechanics of the production of damaged starch and on the susceptibility of individual varieties to incur such damage. Another study has attempted to examine the effect of varying levels of damaged starch upon the bread-making characteristics of the flours using a number of baking methods.

To maintain an effective program of research and development, Laboratory facilities must, from time to time, be remodelled and updated. Several major construction projects were undertaken during the year. New and much more adequate quarters were provided for the library and the Laboratory's seminar room. Space was acquired for the building of two new laboratories, one of which is now occupied by the pesticide residue section. Modifications were also made to the facilities of the milling section to enable an expanded program of milling research to be started. The general office area and the

photography and drawing section were enlarged, and the Laboratory's data processing section was relocated.

Study of Grain Handling and Grading. A study of the Canadian system of handling and grading grain which commenced in 1965 was completed during 1967. Mr. M. J. Conacher, who conducted the study with the assistance of the Advisory Committee on Grain Handling and Grading, prepared a report and submitted it to the Board.

The report includes a series of recommendations for amendments to the statutory grades of grain contained in the schedules of the Canada Grain Act. If the recommendations are implemented the number of statutory grades will be reduced from 226 to 128, and the number of commercial grades will be slightly increased from 32 to 41.

Proposed changes in grades of western red spring wheat are of special interest. The present grade of No. 1 Manitoba Hard and the Garnet grades would be discontinued. It is recommended that Garnet wheat be provided for in commercial grades. The grade, No. 3 Manitoba Northern would be restricted to varieties equal to "Marquis", while No. 4 Manitoba Northern would be open to any variety of red spring wheat of good milling and baking quality. Also, recommendations contained in the report with regard to commercial grades or which deal with the Canada Grain Regulations will be considered by the Committees on Grain Standards and by the Board of Grain Commissioners.

Mr. Conacher has placed on record an expression of his appreciation to the individual members of the Advisory Committee and to senior officers of the Board for their participation and valuable assistance in carrying out this project.

The report will be printed and distributed to the grain trade and other interested parties early in 1968.

Statistical and Economic Studies. Research economists of the Statistics Division served the Board and other divisions in the conduct of economic and analytical studies relating to the various areas of Board responsibility — licence conditions, handling and storage tariffs, and the grading and weighing of grain. They collaborated with research workers at the Department of Agricultural Economics at the University of Manitoba in the areas of grain transportation and oil-seed markets, and at the Department of Geography at Queen's University on area criteria for elevator location.

The Director of the Division represented the Board in the newly constituted 12-member Grain Transportation Technical Study Group. This is the first time that all elements of the grain handling industry—

government agencies, elevator companies and major railways — have joined together in a common research effort to co-ordinate and plan Canada's western grain transportation system. The report of the Group's "Grain Transportation Workshop" was a document of major significance to the Canadian grain trade. The Group's further studies include that of a special task force, chaired by the Director, and dealing with the complete area of documents, records, reports and data communications within the western grain trade.

Information Program

Publications. Statistics on the movement and storage of grain within the licensed elevator system were disseminated on a regular basis through a series of major bulletins issued by the Statistics Division. These included a weekly summary of grain handlings which indicates receipts, shipments and the current inventory position; a monthly and an annual review of Canadian grain exports; a detailed analysis of licensed storage facilities showing locations and capacities at the beginning of the crop year; an annual review of the supply and disposition of Canadian grain in licensed elevators; and an annual report of grain marketings at individual country elevator delivery points. The Division also released a special bulletin entitled "**Canadian Grain Exports, Crop Years 1946-47 to 1965-66**" which was very well received by the grain trade and other associated statistical and government agencies.

The Research Laboratory publishes a separate annual report which contains detailed information with respect to its work.

To provide overseas buyers and importers of Canadian red spring and amber durum wheat with quality data on recent export shipments of these grains, the Laboratory continued its practice of publishing quarterly cargo bulletins. These publications, which are widely distributed, give up-to-date quality data for samples representative of the average of each grade of red spring and amber durum wheat shipped out of Atlantic and Pacific ports.

Quality data for the various grades of the new crop of Western Canadian red spring wheat, amber durum wheat, barley, flax and rapeseed, obtained in the Laboratory's 1967 harvest surveys, were published in the fall of 1967 in the form of a spring wheat protein map and three crop bulletins. Summaries of these new crop data were also presented to the Committee on Western Grain Standards at its 1967 meeting in Winnipeg in October.

Sixteen papers describing the results of Laboratory research were published in scientific and technical journals during 1967.

Meetings. Members of the Board and senior officials accepted a number of invitations to address annual meetings of producer organizations and to discuss topics of current interest relating to the Board's work. In addition, they attended meetings held by several agricultural and other organizations, including the Agricultural Institute of Canada, the Canadian Federation of Agriculture, National Farm and Business Forum and Hudson Bay Route Association. An event of special interest to the Board was the Canadian Centennial Wheat Symposium in Saskatoon in May 1967, at which Dr. G. N. Irvine, Director of the Research Laboratory, presented a paper entitled "Wheat and Its Quality."

Dr. Irvine and various members of the Laboratory staff attended a number of scientific meetings. A complete listing is included in the Laboratory's 1967 Annual Report.

In June 1967, the Board held a meeting at Montreal at which interested parties were invited to present briefs relating to maximum tariffs of charges for handling of grain at licensed eastern elevators.

The Board convened regular meetings of the Committees on Western and Eastern Grain Standards. During these meetings, the members of the Committees, who represent various segments of the grain trade, were provided with detailed information in regard to current grain crops and recent changes in grain grading procedure.

Overseas Visits. During 1967 the Chief Commissioner and the Chief Grain Inspector visited several countries in Western Europe to hold discussions with importers and millers of Canadian grain and oil seeds in regard to such matters as the Board's inspection and grading system and the quality of current Canadian grain exports. Also, information was exchanged on facilities for handling and transporting grain.

Dr. G. N. Irvine, Director of the Research Laboratory, and Dr. I. Hlynka, Assistant Director, attended the meetings of the International Association for Cereal Chemistry in Vienna, Austria. Dr. W. O. S. Meredith attended the Congress of the European Brewery Convention in Madrid and the Irish Maltsters' Conference in Dublin.

In conjunction with attendance at these overseas meetings, technical service visits were made to cereal laboratories, milling and baking laboratories and institutes, government agencies, maltsters and distillers in Great Britain and in a number of countries in Europe. Dr. Irvine also made a technical service visit to Japan and Taiwan. Dr. Hlynka's trip to Europe was undertaken as a result of his receiving the Carl Wilhelm Brabender award for outstanding contributions to

the field of rheology as applied to the milling and baking industry. This award contains a stipend for travel in Europe.

Tours of Board Facilities. In February 1967, members of the House of Commons Standing Committee on Agriculture, Forestry and Rural Development visited the Board's offices and laboratories as part of a tour of western cities to meet with officials of various government departments and other organizations interested in the sale and handling of grain.

During the year many other individuals and groups visited the Board and toured its inspection and laboratory facilities to discuss matters related to the grain trade and obtain first hand information about the functions and services of the Board. These visitors included the Minister of Agriculture for Poland and party; missions sponsored by the Canadian Wheat Board from Italy, Germany, Bulgaria, Hungary, Japan and Yugoslavia; an oil seed mission from Japan and a group of Australian farmers.

Special arrangements were made to provide tours and lecture sessions for groups of country elevator agents, university students in agriculture, and Assistant Trade Commissioners-in-Training from the Department of Trade and Commerce.

Films. The Board's film, "Grain Handling in Canada" was produced in 1954 and has been well received by individuals and groups interested in obtaining information about the Board's functions, services and facilities. In 1966, production of a new film was commenced as a joint project of the Board of Grain Commissioners and the Canadian Wheat Board. It deals principally with the production and marketing of wheat in Canada and methods used to achieve quality control in wheat for export to overseas millers, and should assist in promoting export sales. Steady progress continued throughout 1967 and it is expected that the film will be completed and available for distribution and showing to interested groups within a few months.

Mobile Exhibit. The semi-trailer type vehicle which had contained the Board's mobile exhibit for the past 10 years was turned over to another branch of the Department of Agriculture. A new self-contained vehicle was obtained late in the year and work commenced on planning up-to-date exhibit material for installation. It is hoped to have the new exhibit ready for a tour of agricultural fairs and meetings in the Prairie Provinces commencing in the spring of 1968. Emphasis will be centered on a display of grain samples illustrating varieties and grades, and the numerous factors which

are considered in the grading of grain. The object is to provide detailed information and guidance in this regard to producers, elevator agents and local company superintendents. Members of the Board's Inspection Division staff will be in attendance to give information and advice to interested parties. The grain grading exhibit has been popular and quite successful from a training point of view.

Other Services

Pesticide Residue Surveys. The use of chemicals for control of weeds, fungi and insects at various stages of grain production and handling has become an increasing practice. Some of these chemicals are hazardous to both humans and animals and consequently must not be permitted to enter human food or animal feed channels.

Scientific techniques have been developed and are continually being improved to check chemical residues and to ascertain that the registered products applied to various food commodities are being used according to good agricultural practice. The Pesticide Residue Section of the Board's Research Laboratory has evolved a suitable technique for the detection and quantitation of organo-chlorine pesticide residues in Canadian grain using gas-liquid chromatography. The technique is being used to monitor carlots of grain suspected to contain treated seed and also to monitor wheat cargoes shipped overseas.

Several European countries which import grain are preparing legislation or have passed regulations effective January 1, 1968, which deal with tolerances of toxic chemical residues in such food imports. As a result, Canadian authorities may soon find it necessary to provide overseas importers with certificates to the effect that grain shipments comply with national and international requirements.

Entomological Surveys. Dr. E. A. R. Liscombe, the Board's Entomologist, visited nearly all of the licensed terminal and eastern elevators at least once during the year. In general, sanitation was found to be satisfactory. However, an occasional insect problem developed due to lack of vigilance on the part of elevator personnel. During August and September, when vessels on the Great Lakes were idle due to a strike, special precautions were taken to detect insect infestations in grain cargoes on board the vessels, as any such infestation could contaminate elevator stocks following unloading of the grain.

New techniques were applied against the general moth problem experienced in terminals on the West Coast with promising results. In the latter months of the year, a slight increase in the insect population in the elevators in this area was attributable to reduced grain movements and a layoff of elevator personnel.

Infestation in U.S. grain received for storage continued to be somewhat of a problem for eastern elevators. At the beginning of the shipping season an inspection program was instituted whereby each incoming cargo of foreign grain was sampled and checked for the presence of insects. Also, discussions were held with officials of the United States Department of Agriculture in Washington, D.C., with a view to devising better procedures for insect detection and control.

Some insect and rodent infestations were reported from licensed country elevators during the latter half of the year. Although the problems were quickly brought under control, they did indicate the need for added vigilance when warm weather persists so long into the fall of the year.

Further data was obtained on the level of insect control resulting from the use of fumigants on grain below 60° F. The data showed liquid formulations to be generally ineffective under such conditions. Work was also undertaken to investigate the possibility of fumigating grain in transit, as many attempts to fumigate grain in single-bin frame annexes have not been satisfactory.

In 1967, a total of 72 carlots of grain were found to be infested with insects at the time of unload compared with 99 in 1966. Appropriate steps were taken by Board officials to ensure that all of this grain received adequate fumigation treatment.

Moisture Testing Equipment Control. The Laboratory is responsible for supervising and checking the moisture-testing equipment in use in the Grain Inspection Division at all of its offices across Canada. This work involves three separate series of checks, one for Brown-Duvel oil distillation equipment, one for Model 919 moisture meters with 3½" cells and one for Model 919 moisture meters with 3" cells. Servicing, checking of the calibration and adjusting of the Model 919 equipment was undertaken in the Laboratory when necessary.

Grain Appeal Tribunal. The Grain Appeal Tribunal at Winnipeg deals with all appeals received with respect to the unload grades of cars officially inspected in the Western Division. The Chairman, who is appointed by the Minister of Agriculture, is a member of the Board's staff, but is completely independent of the Inspection Divi-

sion. The other eight members are senior employees of various companies which operate licensed elevators. These men are all competent grain inspectors who have been recommended to the Board for appointment to the Tribunal. Each sample placed before the Tribunal is examined by two members in addition to the Chairman and the decision of the Tribunal is final. The members have no knowledge of the origin of any sample under review.

During the crop year 1966-67, a total of 452 appeals were dealt with and the grades assigned by the Inspection Division were sustained in 439 of these cases. There has been a significant decrease in the number of appeals in recent years as a result of centralized uniform handling of re-inspection requests at Inspection Division headquarters in Winnipeg. Also, larger proportions of recent grain crops have qualified for the higher grades and shippers have been generally more satisfied with grades received on carload lots.

Grading Services to Producers. Producers and country elevator agents wishing to obtain government grading and dockage on unofficial samples may submit such samples to any Inspection Division office. If a sample is enclosed in a moisture-proof container the sender may also obtain an official moisture test. No fee is charged for inspection of samples submitted by producers.

In the 1966-67 crop year, 24,870 unofficial and "Subject to Grade and Dockage" samples were inspected at all inspection points, and of this total 45% or 11,223 were rapeseed or domestic mustard seed samples. The majority of samples of these oilseeds required seed analyses with rapeseed, in particular, a problem, on account of admixtures of wild mustard seed.

The Chief Grain Inspector received 35 requests from producers to establish whether or not the identity of special bin grain had been preserved in handling through country elevators. In 12 cases, he established and ruled that the identity of the producer's grain had not been preserved.

Services to Other Organizations. The Statistics Division continued to function as a statistical support agency for the Canadian Wheat Board, supplying to that Board all major reports and publications compiled by the Division, particularly those related to country elevator operations and the positioning of grain stocks. Substantial co-operation between this office and the Canadian Wheat Board existed in the utilization of data exchange by means of electronic data processing.

The Division served as the prime source of grain handling statistics pertaining to the licensed elevator system for incorporation

in a variety of statistical releases by the Dominion Bureau of Statistics. In particular, this office supplied the Agricultural Division of the Bureau with the primary material for the joint publication, "The Grain Trade of Canada."

The Research Laboratory maintains a close liaison with the Technical Service and Market Research Department of the Canadian Wheat Board. As a regular service the Laboratory provides the Wheat Board with detailed quality data on samples of world wheats entering various market areas.

The Laboratory's specialized facilities for research in cereal chemistry are made available in a limited way to cereal technologists from other countries. During the year, two Japanese cereal chemists each completed a year of study and research in the Laboratory.

Special Acts Administration. Under the provisions of the Prairie Farm Assistance Act, the Board continued to collect the 1 percent levy on grain purchased by licensees under the Canada Grain Act. During the 1966-67 crop year the amount collected was \$11,674,083, an increase of \$1,342,696 over collections recorded for the previous crop year. Levy collections by the Board since the inception of the Act (August 1, 1939) to July 31, 1967, total \$185,902,985. Licensees are required to file with the Board's Statistics Division monthly and annual declarations summarizing the value of purchases of grain subject to the levy and the amount of levy collected on such purchases.

Section 5 of the Inland Water Freight Rates Act gives the Board authority to establish maximum freight rates for the carriage of grain from Fort William or Port Arthur to other specified ports in Eastern Canada. No maximum rates have been set by the Board since the existing schedule was revoked by Order No. 21 on March 10, 1959. The Statistics Division receives and scrutinizes copies of vessel charter confirmations covering all lake grain cargoes shipped from Fort William/Port Arthur during the navigation season, and compiles summaries of Weighted Average Lake Freight Rates to keep the Board informed on current trends in rate levels.

SECTION 4 — PERSONNEL ADMINISTRATION

Personnel administration was heavily concentrated on the emerging classification conversion and collective bargaining programs, with particular emphasis placed on the involvement and training of managers and supervisors in these areas.

Changes in Personnel. On April 1, 1967, the financial administration unit in the Executive Offices was strengthened by the addition of a financial officer and supporting staff. The unit took over the revenue collection function previously carried out by the Comptroller of the Treasury.

Mr. M. J. Conacher, Special Advisor to the Board and former Chief Grain Inspector, retired after a period of 45 years' service on the Board's staff. Mr. W. E. Turner of the Weighing Division at Fort William was promoted and transferred to Winnipeg to the new position of Assistant General Manager, Canadian Government Elevators.

Excluding the Canadian Government Elevators, staffing changes were about 10% less than in 1966, which reflected a reduction in grain handling. A total of 77 appointments were made to full-time positions, and 91 casual employees were engaged for varying periods. Promotions were approved for 53 employees during the year. Deaths, retirements and resignations numbered 5, 13 and 52 respectively.

Staff Training. Division heads and other senior employees attended a number of seminars which dealt with such matters as classification of positions, collective bargaining, grievance procedures and financial management.

The Inspection Division conducted a vigorous and effective staff training program throughout the year. In October, the grain inspectors in charge at the various points attended a seminar in Winnipeg. New concepts and policies were developed to give impetus to the program and place more responsibility for training on district and area officers in charge. A total of 23 grain inspection assistants received training in their first year of service. Certificates of proficiency were received by 12 grain inspectors, and 70 grain inspectors received training and qualified as seed analysts for rapeseed and domestic mustard seed.

The Weighing Division prepared a new Rules and Regulations Manual illustrated with numerous drawings of grain elevator equipment. Copies of the manual were supplied to all operational personnel

as part of the regular staff training program and to assist in maintaining a high level of efficiency.

A total of six employees, mostly Laboratory personnel, took evening or correspondence courses in various subjects relating to their duties and were partially reimbursed for the cost of tuition fees.

APPENDIX A

Grain Statistics and Quality

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A-1—Supply and Disposition of Canadian Grain, Crop Year 1966-67

	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed
	bu.	bu.	bu.	bu.	bu.	bu.
SUPPLY						
Carry-over July 31, 1966	420,122,308	127,162,973	97,752,538	10,566,888	11,141,301 ⁴	3,148,303
Production in 1966 ..	827,338,000	374,678,000	301,235,000	17,220,000	22,020,000	25,800,000
Total Supply	1,247,460,308	501,840,973	398,987,538	27,786,888	33,161,301	28,948,303
DISPOSITION						
Exported overseas	514,848,080 ¹	2,374,281	45,749,522	8,390,862	16,568,065	13,812,327
Exported to U.S.A.	754,965 ²	1,424,284	7,371,854	1,571,948	—	—
Consumed in Canada ³	155,106,728	388,251,303	214,114,992	9,528,907	4,762,138	9,308,286
Total Disposition	670,709,773	392,049,868	267,236,368	19,491,717	21,330,203	23,120,613
CARRY-OVER						
(July 31, 1967)						
On farms (estimated)	205,000,000	81,000,000	67,000,000	2,200,000	1,500,000	969,000
In country, private, terminal and mill elevators	278,118,484	22,926,631	56,482,894	4,451,243	8,176,882	4,038,524
In store and afloat to eastern elevators	68,921,788	3,901,660	4,174,027	735,572	1,122,218	—
In eastern flour mills	2,310,015	67,369	—	—	—	—
In transit by rail — Eastern and Western Divisions	22,400,248	1,895,445	4,094,249	446,679	1,031,998	820,166
In store and in transit to the U.S.A.	—	—	—	461,677	—	—
Total in store July 31, 1967	576,750,535	109,791,105	131,751,170	8,295,171	11,831,098	5,827,690

¹ Includes 32,265,856 bushels of wheat flour.

² Includes 600,052 bushels of wheat flour.

³ Includes the following quantities subsequently exported in processed form: seed wheat, 718,593 bushels; rolled oats and oatmeal, 286,934 bushels; barley malt, 5,420,470 bushels; and linseed oil, 510,934 bushels.

⁴ Western farm stocks of flaxseed revised.

A-2 — Licences in Force and Storage Capacity, August 1, 1967 and 1966

Type of licence	Licences in force		Licensed storage capacity	
	August 1		August 1	
	1967	1966	1967	1966
Country elevator	5,034	5,085	389,675,850	384,552,300
Terminal and mill elevator	65	68	170,145,860	170,840,860
Eastern elevator	31	31	122,365,300	122,365,300
Track buyer, commission merchant and grain dealer	30	29	†	†
Totals	5,160	5,213	682,187,010	677,758,460

† These licences do not cover grain storage facilities

A-3—Inward Carlot Inspections of Western Grain, Crop Year 1966-67

Grade	Carlots	Percentage	Percentage of total wheat inspected
WHEAT			
1 Manitoba Northern	21,834	7.3	—
2 Manitoba Northern	114,582	38.1	—
3 Manitoba Northern	88,906	29.6	—
Tough 1 to 3 Manitoba Northern	15,875	5.3	—
4 Manitoba Northern	24,263	8.1	—
Tough 4 Manitoba Northern	13,988	4.7	—
4 Special	15	—	—
No. 5	8,491	2.8	—
No. 6	1,962	.7	—
Feed	215	.1	—
Garnet	252	.1	—
Tough Others	6,732	2.2	—
Damp	1,327	.4	—
Smutty	38	*	—
Rejected	1,862	.6	—
Others Red Spring	82	*	—
Total red spring wheat	300,424	100.0	93.6
1 Canada Western Amber Durum	133	.9	—
2 Canada Western Amber Durum	2,472	16.8	—
3 Canada Western Amber Durum	5,693	38.7	—
Extra 4 Canada Western Amber Durum	3,560	24.2	—
4 Canada Western Amber Durum	1,577	10.7	—
5 Canada Western Amber Durum	232	1.6	—
6 Canada Western Amber Durum	8	.1	—
Tough Durum	542	3.7	—
Others Durum	490	3.3	—
Total amber durum wheat	14,707	100.0	4.6
Total soft white spring	456	—	.1
Total mixed wheat	257	—	.1
Total Alberta winter wheat	5,045	—	1.6
Total all wheats	320,889	—	100.0

*Less than 0.05%

A-3—Inward Carlot Inspections of Western Grain, Crop Year 1966-67
Continued

Grade	Carlots	Percentage
OATS		
1 Canada Western	—	—
2 Canada Western	14	.1
Extra 3 Canada Western	116	1.0
3 Canada Western	3,763	31.1
Extra 1 Feed	2,329	19.2
1 Feed	4,646	38.4
2 Feed	515	4.3
3 Feed	90	.7
Mixed Feed	66	.5
Tough	469	3.8
Damp	5	.1
Rejected	45	.4
Others	48	.4
Total oats	12,106	100.0
BARLEY		
1 Canada Western Six-Row	1	—
2 Canada Western Six-Row	101	.2
3 Canada Western Six-Row	9,292	19.6
1 Canada Western Two-Row	2	—
2 Canada Western Two-Row	191	.4
3 Canada Western Two-Row	2,278	4.8
1 Feed	22,338	47.0
2 Feed	5,155	10.9
3 Feed	636	1.3
Tough	7,205	15.2
Damp	143	.3
Rejected	85	.2
Others	31	.1
Total barley	47,458	100.0
RYE		
1 Canada Western	4	.1
2 Canada Western	2,225	37.5
3 Canada Western	2,853	48.2
4 Canada Western	85	1.4
Ergoty	313	5.3
Tough	438	7.4
Damp	4	.1
Rejected	2	*
Others	1	*
Total rye	5,925	100.0

**A-3—Inward Carlot Inspections of Western Grain, Crop Year 1966-67
Continued**

Grade	Carlots	Percentage
FLAXSEED		
1 Canada Western	10,500	89.9
2 Canada Western	130	1.1
3 Canada Western	94	.8
4 Canada Western	8	.1
Tough	725	6.2
Damp	34	.3
Rejected	112	.9
Others	82	.7
Total flaxseed	11,685	100.0
Corn	34	—
Sunflower seed	33	—
Mixed grain	279	—
Screenings	535	—
Buckwheat	121	—
Peas	60	—
Rapeseed	7,818	—
Sample grain	138	—
Mustard seed	964	—
Condemned grain	37	—
	10,019	—
Grand total	408,082	—

*Less than 0.05%

**A-4—Samples of Western Grain “Subject to Grade and Dockage”
Inspected Crop Year 1966-67, Compared with Crop Year 1965-66**

Point	1966-67	1965-66
	Number of samples	
Winnipeg	11,548	12,605
Calgary	3,167	2,577
Edmonton	2,951	2,696
Moose Jaw	103	146
Saskatoon	1,036	713
Lethbridge	6,065	4,439
Totals	24,870	23,176

A-5—Inward Carlot Re-Inspections of Western Grain, Crop Year 1966-67

Point	Inspected	Re-Inspected	Un-changed	Grades raised	Grades lowered	Dockage raised	Dockage lowered
Fort William	245,694	14,870	12,991	1,770	85	6	18
Winnipeg	10,221	1,095	907	174	—	4	10
Churchill	11,484	364	294	65	3	—	2
Moose Jaw	3,144	411	376	35	—	—	—
Saskatoon	6,515	475	395	61	17	1	1
Calgary	5,274	388	286	90	7	1	4
Edmonton	1,271	89	73	7	7	1	1
Medicine Hat	2,185	143	100	34	8	1	—
Lethbridge	982	63	60	2	—	—	1
Prince Rupert	6,022	227	206	20	—	—	1
Vancouver	115,290	9,429	7,918	1,458	29	3	21
Totals	408,082	27,554	23,606	3,716	156	17	59
Percentage of total carlots	100.0	6.8	5.8	.9	.03	—	.01

**A-6—Outward Carlot Inspections of Western Grain at Terminal and
Mill Elevators, Crop Year 1966-67**

Grain	Fort William and				Moose Jaw
	Winnipeg	Port Arthur	Calgary	Edmonton	
Wheat	141	927	126	246	403
Oats	201	1,559	29	133	31
Barley	307	530	103	118	17
Flaxseed	—	12	5	12	5
Rye	1	21	2	—	2
Mixed grain	25	6	6	—	1
Corn	—	—	—	—	—
Buckwheat	2	—	—	—	—
Peas	40	—	—	—	—
Screenings	209	5,786	147	52	54
Rapeseed	—	3	14	38	—
Sample feed grain	16	—	20	—	—
Mustard seed	17	—	196	98	—
Sample grain	43	24	14	—	3
Totals	1,002	8,868	662	697	516

	Saskatoon	Lethbridge	Medicine Hat	Vancouver, Victoria and Prince Rupert		Churchill
Wheat	5	11	89	11	—	—
Oats	45	—	—	245	—	—
Barley	9	8	1	1	—	—
Flaxseed	—	—	—	—	—	—
Rye	—	—	—	6	—	—
Mixed grain	—	—	—	9	—	—
Corn	—	—	—	—	—	—
Buckwheat	—	—	—	—	—	—
Peas	—	—	—	—	—	—
Screenings	266	5	22	1,039	—	—
Rapeseed	4	—	—	—	—	—
Sample feed grain	—	—	—	—	—	—
Mustard seed	—	31	—	—	—	—
Sample grain	6	—	25	—	—	—
Totals	335	55	137	1,311	—	—

A-7—Carlot Inspections of Eastern Grain, Crop Year 1966-67

Grades				Montreal	Toronto	Chatham	Total
WHEAT							
1	Canada	Eastern	White Winter	—	119	328	447
2	Canada	Eastern	White Winter	—	55	992	1,047
3	Canada	Eastern	White Winter	—	3	83	86
4	Canada	Eastern	White Winter	—	—	16	16
5	Canada	Eastern	White Winter	—	—	2	2
1	Canada	Eastern	Mixed Winter	—	—	8	8
2	Canada	Eastern	Mixed Winter	—	—	17	17
3	Canada	Eastern	Mixed Winter	—	—	9	9
	Tough			—	21	404	425
	Smutty			—	—	1	1
	Damp			—	—	1	1
	Sample			—	—	3	3
	Totals			—	198	1,864	2,062
OATS							
4	Canada	Eastern		—	4	1	5
	Tough			—	1	5	6
	Sample			—	5	2	7
	Totals			—	10	8	18
BARLEY							
2	Canada	Eastern	Six-Row	—	—	1	1
3	Canada	Eastern	Six-Row	—	1	176	177
2	Canada	Eastern	Two-Row	1	—	—	1
3	Canada	Eastern	Two Row	—	2	82	84
4	Canada	Eastern		—	3	25	28
5	Canada	Eastern		—	—	3	3
	Tough			—	—	20	20
	Sample			—	—	1	1
	Totals			1	6	308	315
RYE							
2	Canada	Eastern		—	—	3	3
2	Canada	Eastern	Special	—	—	5	5
3	Canada	Eastern	Special	—	—	1	1
	Tough			—	—	6	6
	Totals			—	—	15	15

A-7—Carlot Inspections of Eastern Grain, Crop Year 1966-67—Continued

Grades	Montreal	Toronto	Chatham	Total
CORN				
Extra Dry 1 Canada Eastern Yellow	—	1	841	842
1 Canada Eastern Yellow	—	—	556	556
Extra Dry 2 Canada Eastern Yellow	—	—	675	675
2 Canada Eastern Yellow	—	—	813	813
Extra Dry 3 Canada Eastern Yellow	—	—	139	139
3 Canada Eastern Yellow	—	—	196	196
Extra Dry 4 Canada Eastern Yellow	—	—	23	23
4 Canada Eastern Yellow	—	—	30	30
Extra Dry 5 Canada Eastern Yellow	—	—	6	6
5 Canada Eastern Yellow	—	—	6	6
Tough	—	1	247	248
Damp	—	—	308	308
Moist	—	—	130	130
Wet	—	—	10	10
Sample	—	—	1	1
Totals	—	2	3,981	3,983
BEANS				
Extra 1 Canada Eastern Pea	—	—	4	4
1 Canada Eastern Pea	—	—	132	132
2 Canada Eastern Pea	—	—	17	17
3 Canada Eastern Pea	—	—	7	7
4 Canada Eastern Pea	—	—	4	4
1 Canada Eastern Light Red Kidney	—	—	1	1
Tough	—	—	16	16
Damp	—	—	1	1
Totals	—	—	182	182
SOYBEANS				
1 Canada Yellow	—	18	802	820
2 Canada Yellow	1	10	1,261	1,272
3 Canada Yellow	—	—	26	26
4 Canada Yellow	—	—	9	9
5 Canada Yellow	—	—	1	1
Tough	—	3	56	59
Sample	—	—	3	3
Totals	1	31	2,158	2,190
Totals, all grains	2	247	8,516	8,765

**A-8—Inspections of Eastern Grain in Cargoes, Bins, Trucks or Warehouses,
Crop Year 1966-67**

Grain	Montreal	Toronto	Chatham	Total
	bu.	bu.	bu.	bu.
Wheat	593,675	—	2,339,315	2,932,990
Oats	105,876	—	—	105,876
Buckwheat	59,258	—	—	59,258
Corn	—	—	798,046	798,046
Beans	—	—	1,193,396	1,193,396
Soybeans	768,546	—	2,057,998	2,826,544
Totals	1,527,355	—	6,388,755	7,916,110

**A-9—Inward and Export Cargoes Sampled and Inspected,
Crop Year 1966-67**

	Montreal	Sorel	Three Rivers	Quebec	Halifax and Saint John	Baie Comeau	Total
	bu.	bu.	bu.	bu.	bu.	bu.	bu.
Eastern grain							
Inward	498,894	—	—	—	1,323	—	500,217
Export	3,189,523	—	—	—	55,977	—	3,245,500
Western grain							
Inward	13,139,024	571,239	—	—	—	—	13,710,263
Export	114,485,735	29,492,246	18,238,227	28,345,530	32,960,957	64,646,056	288,168,751
Totals ..	131,313,176	30,063,485	18,238,227	28,345,530	33,018,257	64,646,056	305,624,731

A-10—Grain Sampled but not Inspected, Crop Year 1966-67

	Montreal	Sorel, Three Rivers and Quebec	Baie Comeau	Total
Eastern grain				
Carlots	469	—	—	469
Inward cargoes (bu.)	34,973	—	—	34,973
Outward cargoes (bu.)	—	—	—	—
Bin lots (bu.)	1,181,076	—	—	1,181,076
Western grain				
Carlots	11	—	—	11
Inward cargoes (bu.)	3,568,364	192,114	—	3,760,478
Outward cargoes (bu.)	—	—	—	—
Bin lots (bu.)	1,578,119	—	—	1,578,119
U.S.A. grain				
Carlots	78	—	—	78
Inward cargoes (bu.)	6,985,102	1,517,250	262,624	8,764,976
Outward cargoes (bu.)	5,082,151	13,749,961	37,992,863	56,824,975
Bin lots (bu.)	499,666	—	—	499,666
Totals — cars	558	—	—	558
— bushels	18,929,451	15,459,325	38,255,487	72,644,263

A-11—Gross Quantities of Grain Inspected and Weighed at Terminal Elevators, Crop Year 1966-67

Point	Wheat	Oats	Barley	Rye
	bu.	bu.	bu.	bu.
RECEIPTS				
Fort William-Port Arthur	375,929,721	31,555,477	74,881,276	6,096,120
Vancouver-New Westminster	162,774,191	84,439	23,628,593	5,812,917
Victoria	11,557,750	7,388	—	—
Prince Rupert	11,418,122	1,374	—	—
Churchill	21,316,353	142	—	—
Calgary	883,200	2,866	1,215,393	7,847
Edmonton	847,877	2,607	26,635	—
Lethbridge	938,291	—	19,823	—
Moose Jaw	5,364,069	256	—	—
Saskatoon	5,065,248	479	—	2,392
Total receipts	596,064,822	31,655,028	99,771,720	11,919,276
SHIPMENTS				
Fort William-Port Arthur	358,368,966	38,946,879	73,662,072	7,300,135
Vancouver-New Westminster	158,886,391	1,200,647	24,016,163	5,521,297
Victoria	11,547,934	93,764	8,552	—
Prince Rupert	11,023,388	94,040	—	—
Churchill	21,031,320	131,860	—	—
Calgary	384,664	15,341	763,133	7,847
Edmonton	538,565	24,624	26,612	—
Lethbridge	30,958	3,935	19,583	—
Moose Jaw	475,108	—	—	—
Saskatoon	84,060	—	—	2,392
Total shipments	562,371,354	40,511,090	98,496,115	12,831,671

A-11—Gross Quantities of Grain Inspected and Weighed at Terminal Elevators, Crop Year 1966-67—Continued

Flaxseed	Corn	Buckwheat	Mustard seed	Rapeseed	Miscellaneous
bu.	bu.	bu.	bu.	bu.	bu. (50 lbs. per bu.)
RECEIPTS					
14,934,923	—	79,691	132,802	1,591,596	3,487,971
8,248,637	—	183,500	925,269	13,667,717	2,611,236
513	—	—	—	269	—
—	—	—	—	—	—
—	—	—	—	—	—
12,815	—	—	552,435	96,009	—
23,292	—	—	395,508	99,355	149
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	1,298	—	—
23,220,180	—	263,191	2,007,312	15,454,946	6,099,356
SHIPMENTS					
12,263,566	—	75,788	130,298	1,517,711	20,667,729
6,629,396	—	175,677	914,912	12,463,458	11,412,885
—	—	—	—	—	417,940
—	—	—	—	—	389,303
—	—	—	—	—	243,296
12,815	—	—	444,167	80,280	54,174
18,461	—	—	266,271	83,458	99,375
—	—	—	—	—	15,373
—	—	—	—	—	57,267
—	—	—	—	1,227	72,224
18,924,238	—	251,465	1,755,648	14,146,134	33,429,566

A-12—Carlots Weighed, Leaking or with Defective Seals, in the Western Division, Crop Years 1965-66 and 1966-67

	Number		Percentage of total	
	1966-67	1965-66	1966-67	1965-66
Cars weighed in	410,902	415,758	100.0	100.0
Inward cars leaking	48,215	54,026	11.7	12.9
Inward cars with missing or defective seals	29,327	18,310	7.1	4.4
Cars weighed out	17,945	20,970	—	—

A-13—Average Reported Outturn Shortages on Vessel Shipments of Grain ex Fort William-Port Arthur to Canadian and United States Ports, Crop Year 1966-67

Grain	Bushels shipped	Shortage in pounds per 1,000 bushels	
		1966-67	1965-66
CANADIAN PORTS			
Wheat	318,124,073	45.56	46.41
Durum wheat	28,605,498	43.85	41.70
Oats	34,307,288	25.42	22.81
Barley	47,428,217	45.77	38.72
Rye	3,143,063	43.79	57.06
Flaxseed	5,456,638	45.98	56.62
Rapeseed	480,081	35.35	78.25
Screenings (in tons)	89,756	1.89 lbs. per ton	1.47 lbs. per ton
UNITED STATES PORTS			
Oats	119,515	44.69	—
Barley	6,809,128	63.62	63.89
Rye	1,684,516	106.68	94.20

**A-14—Tough and Damp Grain Dried at Terminal Elevators,
Crop Year 1966-67**

	Artificial drying			Natural Drying	Total
	Tough	Damp	Tough and damp		
	bu.	bu.	bu.	bu.	bu.
Lakehead					
Wheat	21,811,764	944,315	22,756,079	20,741,230	43,497,309
Durum	65,548	37,809	103,357	906,616	1,009,973
Oats	92,743	9,120	101,863	659,823	761,686
Barley	843,123	177,957	1,021,080	4,290,898	5,311,978
Rye	33,213	596	33,809	450,918	489,727
Flaxseed	290,946	13,890	304,836	723,654	1,028,490
Mixed grain	384	3,340	3,724	204	3,928
Buckwheat	—	—	—	20,362	20,362
Rapeseed	105	—	105	187	292
Totals	23,142,826	1,187,027	24,329,853	27,793,892	52,123,745
Pacific Coast					
Wheat	14,383,199	1,428,749	15,811,948	12,491,756	28,303,704
Durum	—	3,731	3,731	3,542	7,273
Oats	—	497	497	1,400	1,897
Barley	864,723	48,489	913,212	1,563,920	2,477,132
Rye	—	4,556	4,556	240,825	245,381
Flaxseed	41,235	19,943	61,178	245,848	307,026
Mixed grain	—	—	—	100	100
Buckwheat	—	—	—	3,266	3,266
Rapeseed	—	3,365	3,365	36,774	40,139
Totals	15,289,157	1,509,330	16,798,487	14,587,431	31,385,918
Interior					
Wheat	16,882	112,548	129,430	22,698	152,128
Durum	—	—	—	—	—
Barley	—	247	247	—	247
Flaxseed	3,500	16,407	19,907	—	19,907
Mixed grain	80	—	80	—	80
Rapeseed	—	—	—	—	—
Mustard Seed	13,772	1,983	15,755	3,865	19,620
Totals	34,234	131,185	165,419	26,563	191,982
Churchill					
Wheat	—	—	—	290,217	290,217
Totals, all positions	38,466,217	2,827,542	41,293,759	42,698,103	83,991,862

**A-15—Quality Data for Average Grades of Hard Red Spring Wheat,
Crop Year 1966-67**

	1 Nor.	2 Nor.	3 Nor.	4 Nor.	No. 5	No. 6
Bushel weight, lb.	67.0	65.0	64.2	62.4	62.2	59.2
1,000 kernel weight, g.	30.8	29.3	30.3	29.8	29.2	28.3
Wheat protein content, %	13.4	13.6	13.4	13.4	12.9	12.3
Flour protein content, %	12.8	13.0	12.8	12.5	12.1	11.4
Flour yield, %	75.6	75.0	74.8	74.5	72.4	69.5
Flour ash content, %	0.47	0.47	0.47	0.48	0.52	0.59
Flour diastatic activity, mg.	175	165	171	171	218	319
Baking absorption, %	60.3	60.1	58.2	58.7	59.1	57.1
Loaf volume, cc.	820	880	860	870	765	565

A-16—Carlot Inspections Appealed, Crop Year 1966-67

Item	Carlots	Percentage
Left as graded	439	97.1
Grades raised	10	2.2
Grades lowered	3	.7
Totals	452	100.0

A-17—Prairie Farm Assistance Act Collections, Crop Year 1966-67

Province	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed	Total
	\$	\$	\$	\$	\$	\$	\$
Man.	725,706.95	78,168.22	92,063.69	13,996.54	147,091.66	17,460.50	1,074,487.56
Sask.	6,579,559.00	104,200.36	353,447.55	66,641.32	155,044.36	129,780.10	7,388,672.69
*Alta.	2,335,381.11	64,867.85	491,465.68	27,957.08	133,807.17	157,443.16	3,210,922.05
Totals	9,640,647.06	247,236.43	936,976.92	108,594.94	435,943.19	304,683.76	11,674,082.30

*Includes Peace River area in B.C.

Penalties on late filing of returns

..Total collections August 1, 1966 to July 31, 1967

11,674,082.30

**A-18—Weighted Average Lake Freight Rates on Canadian Grain from
Fort William - Port Arthur, Season of Navigation 1967**

Port of discharge	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed
(cents per bushel)						
Georgian Bay Ports, Goderich, Sarnia and Walkerville ..	4.561	4.422	4.65	5.18	—	—
Port Colborne	5.741	6.686	6.936	6.25	—	—
Toronto	6.343	6.286	7.944	6.75	7.311	—
Kingston	6.75	6.844	7.0	—	—	—
Prescott	7.241	6.831	7.095	7.479	—	—
Montreal (Direct) ..	10.009	8.441	9.305	10.387	9.827	—
Montreal via Port Colborne	10.5	—	—	—	—	—
Montreal via Prescott	12.478	—	—	—	—	—
Sorel	10.022	—	—	—	—	—
Three Rivers	10.069	8.159	8.353	—	—	—
Quebec	10.112	8.507	8.829	9.75	9.856	11.0
Baie Comeau	10.396	—	10.431	—	10.5	—
Port Cartier	9.0	—	—	—	—	—
Halifax	15.562	12.036	14.661	—	—	—
Other Maritime ports	21.234	18.0	18.403	—	—	—
Buffalo	—	—	8.268	8.239	—	—
Chicago	—	—	8.5	8.5	—	—
Manitowoc	—	—	8.0	—	—	—
Milwaukee	—	—	7.837	—	—	—

Note—Rates originally quoted in United States funds have been converted to Canadian currency at the prevailing rates of exchange.

APPENDIX B

Amendments to Canada Grain Regulations

Amendments made to the Canada Grain Regulations during 1967 were as follows:

- (1) Revision of Section 49 which deals with "Rejected" grades for grain, effective August 1, 1967.
- (2) Revision of Section 75 which deals with shipments of infested grain.
- (3) Increase in the moisture content specified for tough and damp grades of buckwheat in Schedule I, effective August 1, 1967.
- (4) Revision of Schedule I with respect to moisture content of beans, effective September 1, 1967.
- (5) Revision of Schedule G to establish a revised shrinkage allowance on cars of rapeseed unloaded at terminal elevators, effective September 1, 1967.

Committee on Western Grain Standards as at December 31, 1967

F. F. Hamilton	Chief Commissioner	} Board of Grain Commissioners
A. V. Svoboda	Commissioner	
C. L. Shuttleworth	Commissioner	
M. M. Ainslie	Chief Grain Inspector	
Dr. G. N. Irvine	Chief Chemist	
J. L. A. Doray	Chairman, Grain Appeal Tribunal	
Dr. J. A. Anderson	Dominion Cerealist	
L. A. McCorquodale	representing the millers of wheat flour	
H. Anderson	} representing grain growers in Alberta	
R. J. Graham		
E. F. Seney		
K. Anderson		
J. H. Harrison	} representing grain growers in Saskatchewan	
D. L. Yonge		
T. E. Myers		
L. L. Gray		
N. W. Strelioff		
W. J. Parker	} representing grain growers in Manitoba	
P. A. McPhail		
Ray Mitchell		
G. Constable	representing grain growers in British Columbia	
L. Bell	representing Plant Products Division, Canada Department of Agriculture	

Committee on Eastern Grain Standards as at December 31, 1967

F. F. Hamilton	Chief Commissioner	} Board of Grain Commissioners
A. V. Svoboda	Commissioner	
C. L. Shuttleworth	Commissioner	
M. M. Ainslie	Chief Grain Inspector	
W. G. Thomson	representing Montreal Board of Trade	
C. F. Bowker	representing Toronto Board of Trade	
C. Gordon McAuley	representing exporters of grain	
F. H. Dunsford	} representing millers of wheat in the Eastern Division	
C. L. Rogers		
J. R. Heaney	} representing grain growers in Ontario	
C. W. Huffman		
G. C. Nichols	representing growers of corn	
P. Blouin	Additional	
A. Bowman	Additional	

APPENDIX C

List of Publications

Title	Issued
<i>Canada Grain Regulations</i>	Annually
<i>Annual Report, Board of Grain Commissioners</i>	Annually
<i>Canadian Grain Position</i>	Weekly
<i>Exports of Canadian Grain</i>	Monthly
<i>Canadian Grain Exports</i>	Annually
<i>Marketings, Distribution and Visible Carry-over of Canadian Grain</i>	Annually
<i>Grain Elevators in Canada</i>	Annually
<i>Summary of Country Elevator Receipts at Individual Prairie Points</i>	Annually
<i>Grain Research Laboratory Annual Report</i>	Annually
<i>Canadian Wheat. Crop Bulletin</i>	Annually
<i>Canadian Barley. Crop Bulletin</i>	Annually
<i>Canadian Flax and Rapeseed. Crop Bulletin</i>	Annually
<i>Canadian Wheat Cargoes. Bulletin</i>	Quarterly
<i>Canadian Durum Cargoes. Bulletin</i>	Quarterly
<i>Map of Western Canada showing the protein content of hard red spring wheat</i>	Annually
<i>Official Candian Grain Grading Guide</i>	Annually
<i>Identification of Barley and Wheat Varieties</i>	
<i>Handbook on the Sale and Handling of Grain Through a Country Elevator</i>	
<i>The Farmer and the Country Elevator</i>	

Further information with respect to Board of Grain Commissioners Laboratory scientific and technical publications will be found in the Laboratory's 1967 Annual Report.

APPENDIX D

Revenue and Expenditure

Earned revenue and net expenditure of the Board, including the Canadian Government Elevators, for the fiscal year 1966-67 compared with 1965-66 were as follows:

	1966-67	1965-66
Revenue	\$7,512,257	\$6,197,719
Expenditure	7,807,070	7,242,453

Further information in this regard will be found in the following tables.

**D-1—Earned Revenue and Net Expenditure, by Points and Divisions,
Fiscal Year ended March 31, 1967**

	Executive and Administra- tion	Inspec- tion	Weighing	Statistics	Research Labora- tory	Canadian Government Elevators	Total
	\$	\$	\$	\$	\$	\$	\$
REVENUE							
Winnipeg	11,700	51,872	30,101	91,238	—	1,576,655	1,761,566
Churchill	—	102,918	51,878	—	—	—	154,796
Keewatin	—	9,645	5,855	—	—	—	15,500
Saskatoon	—	35,227	17,769	—	—	—	52,996
Moose Jaw	—	15,606	8,368	—	—	—	23,974
Medicine Hat	—	7,317	13,316	—	—	—	20,633
Lethbridge	—	12,943	798	—	—	—	13,741
Calgary	—	26,456	26,566	—	—	—	53,022
Edmonton	—	12,700	4,855	—	—	—	17,555
Vancouver	—	982,794	496,582	27,194	—	—	1,506,570
Victoria	—	52,671	25,154	—	—	—	77,825
Prince Rupert	—	64,288	31,371	—	—	—	95,659
Fort William	—	2,398,771	1,177,059	—	—	—	3,575,830
Toronto	—	6,181	—	—	—	—	6,181
Chatham	—	70,994	—	—	—	—	70,994
Montreal	—	23,010	—	25,235	—	—	48,245
Baie Comeau	—	4,855	12,315	—	—	—	17,170
Totals	11,700	3,878,248	1,901,987	143,667	—	1,576,655	7,512,257
EXPENDITURE							
Winnipeg	275,832	511,512	125,713	304,968	606,004	1,799,417	3,623,446
Churchill	—	5,989	2,496	—	—	—	8,485
Keewatin	—	6,131	7,477	—	—	—	13,608
Saskatoon	21,422	53,188	40,920	—	—	—	115,530
Moose Jaw	—	18,102	20,558	—	—	—	38,660
Regina	21,552	—	—	—	—	—	21,552
Medicine Hat	—	—	14,385	—	—	—	14,385
Lethbridge	—	12,928	6,106	—	—	—	19,034
Calgary	—	99,370	69,864	—	—	—	169,234
Edmonton	23,958	101,127	21,861	—	—	—	146,946
Vancouver	—	456,343	333,869	82,546	—	—	872,758
Victoria	—	29,531	16,998	—	—	—	46,529
Prince Rupert	—	27,393	23,884	—	—	—	51,277
Fort William	—	1,141,962	961,855	101,498	—	—	2,205,315
Toronto	—	14,902	—	—	—	—	14,902
Chatham	—	69,763	—	—	—	—	69,763
Montreal	—	303,306	12,985	26,716	—	—	343,007
Baie Comeau	—	23,887	8,752	—	—	—	32,639
Totals	342,764	2,875,434	1,667,723	515,728	606,004	1,799,417	7,807,070

NOTE: Revenue and Expenditure for all Government Elevators shown opposite Winnipeg

D-2 — Summary of Operations by Divisions, Fiscal Year Ended March 31, 1967

	Executive and Administra- tion	Inspec- tion	Weighing	Statistics	Research Labora- tory	Canadian Government Elevators	Total
	\$	\$	\$	\$	\$	\$	\$
REVENUE							
Fees	—	3,827,466	1,879,685	143,662	—	—	5,850,813
Overtime	—	17,280	18,837	—	—	—	36,117
Express charges	—	4,581	—	—	—	—	4,581
Samples sold	—	27,321	—	—	—	—	27,321
Refund of previous year's expenditures	—	21	635	5	—	—	661
Miscellaneous	11,700	1,579	2,830	—	—	—	16,109
Grain handling charges	—	—	—	—	—	1,576,655	1,576,655
Totals	11,700	3,878,248	1,901,987	143,667	—	1,576,655	7,512,257
EXPENDITURE							
Salaries	261,247	2,577,987	1,572,770	400,662	404,134	1,193,027	6,409,827
Rent	20,466	87,555	8,866	39,818	46,175	6,622	209,502
Travel	29,297	89,284	52,825	3,458	14,966	8,117	197,947
Purchase of equipment	369	17,135	1,315	—	63,057	7,195	89,071
Repairs and upkeep of buildings and works	—	—	—	—	—	190,612	190,612
Grants in lieu of taxes	—	—	—	—	—	152,754	152,754
Power (electrical) ..	—	—	—	—	—	110,021	110,021
Screenings	—	—	—	—	—	70,797	70,797
General expense	27,588	85,706	24,697	24,850	69,179	55,788	287,808
Printing, stationery and office equipment	3,797	17,767	7,250	46,940	8,493	4,484	88,731
Totals	342,764	2,875,434	1,667,723	515,728	606,004	1,799,417	7,807,070

APPENDIX E **Board of Grain Commissioners for Canada**

Chief Commissioner
Commissioner
Commissioner
Secretary

F. F. Hamilton
A. V. Srobona
C. L. Shuttleworth
W. J. MacLeod

SPECIAL ADVISOR TO THE BOARD
(Grading)
M. J. Conacher 2

GRAIN APPEAL TRIBUNAL
Chairman J. L. A. Doray

ADMINISTRATION

Asst. Secretary V. Martens 6
Financial Officer W. S. Rowland 5
Personnel Admin. G. E. Rogers 7

ASSIST. COMMISSIONERS

Winnipeg W. S. Frazer 2
Regina J. H. Davidson 2
Saskatoon R. H. Taylor 2
Edmonton A. Rendfleisch 2

INSPECTION
Chief Inspector
M. M. Ainslie

Staff

Winnipeg 65
Montreal 40
Chatham 8
Toronto 2
Fort William 167
Saskatoon 11
Moose Jaw 2
Lethbridge 2
Calgary 15
Edmonton 15
Vancouver 64
Victoria 4
Prince Rupert 3
Bate Comeau 3
Entomologist
Dr. E. A. R. Liscombe

WEIGHING
Chief Weighman
H. C. Britton

Staff

Winnipeg 18
Montreal 2
Fort William 141
Saskatoon 7
Moose Jaw 2
Medicine Hat 3
Lethbridge 2
Calgary 12
Edmonton 4
Vancouver 54
Victoria 3
Prince Rupert 4
Bate Comeau 1

STATISTICS
Chief Statistician
E. E. Baxter

Staff

Winnipeg 41
Montreal 4
Fort William 17
Vancouver 15

RESEARCH LAB.
Chief Chemist
Dr. G. N. Irvine

Staff

Winnipeg 62

GOVT ELEVATORS
General Manager
A. H. Wilson

Staff

Winnipeg 14
Saskatoon 35
Moose Jaw 32
Lethbridge 20
Calgary 32
Edmonton 24
Prince Rupert 32



CANADA

Board of Grain Commissioners for Canada

ANNUAL REPORT 1968



CANADA DEPARTMENT OF AGRICULTURE, OTTAWA

Minister:

Hon. H. A. Olson, M.P.

Deputy Minister:

S. B. Williams

Price: 50 cents



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Queen's Printer and Controller of Stationery

Ottawa, 1969

Cat. No.: A91-1/1968

BOARD OF GRAIN COMMISSIONERS FOR CANADA

Winnipeg, Manitoba,
January 31, 1969

The Honorable H. A. Olson, M.P.,
Minister of Agriculture,
OTTAWA, Canada.

Sir:

We are pleased to submit the 1968 Report of the Board of Grain Commissioners for Canada, in compliance with Section 23 of the Canada Grain Act.

The report contains a review of the Board's principal activities during the year, together with information and statistics relating to quality and volume of grain handled through the Canadian licensed elevator system during the 1967-68 crop year, and a review of the quality of 1968 grain crops.

Respectfully submitted,

F. Hamilton,
Chief Commissioner.

A. V. Svoboda,
Commissioner.

C. L. Shuttleworth,
Commissioner.

V. Martens,
Secretary.

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Board of Grain Commissioners 1968 Annual Report

INTRODUCTION

The Board of Grain Commissioners is responsible for administering the Canada Grain Act and has general supervision over grain handling in Canada. It has the power to make regulations and orders that are consistent with the Act.

The Board's operations are divided into six main functions. The Executive Offices deal with general administrative matters, provide financial and personnel services, and include the offices of the Assistant Commissioners. The Inspection Division, which is the largest of the operational divisions, provides official inspection and grading of grain at various points across Canada, particularly grain received at and shipped from terminal elevators and grain loaded to vessels for export at eastern elevators. The Weighing Division is responsible for official weighing of grain at terminal and mill elevators, annual weigh-overs of grain stocks in terminal and eastern elevators, and inspection and certification of scales in terminal and eastern elevators. The Statistics Division collects, compiles and publishes basic statistics relating to handling and storage of grain within the licensed elevator system. Other responsibilities include issuing of licences to elevator operators and grain dealers, supervision of bonding of licensees, and registration of warehouse receipts issued by managers of terminal and eastern elevators. The Division is making increasing use of electronic data processing and telecommunication equipment in its work. The Research Laboratory carries on a program of research related to the quality of cereal grains and oil seeds, conducts quality surveys of current crops and shipments, and participates in testing of new varieties in collaboration with plant breeders and the Board's Inspection Division. The Canadian Government Elevators system, which is managed, operated and maintained by the Board, is comprised of six terminal grain elevators located in Western Canada. One of the elevators is situated at the port of Prince Rupert, B.C., and handles grain for loading directly to ocean vessels.

In addition, the Board constitutes Grain Appeal Tribunals and Committees on Western and Eastern Grain Standards. It also has responsibility for collecting the 1 per cent levy under the Prairie Farm Assistance Act and for setting maximum lake grain freight rates when considered advisable, under the provisions of the Inland Water Freight Rates Act.

This report commences with detailed reviews of the amount and quality of grain moved during the 1967-68 crop year, the quality of 1968 grain crops and studies of new varieties of grain. The second section deals with the Board's supervision of the handling of grain

through the elevator system. This includes such matters as licensing and bonding, registration of warehouse receipts, statistics, weigh-overs, inspection of elevators and equipment, and investigation of complaints. The third section gives information on research programs and various information, technical, inspection and statistical services. Section Four deals with personnel administration including such topics as staff training.

A series of appendices to the report includes tables that provide statistical information relating to grain handlings and quality. Information is also given on such matters as amendments to the Canada Grain Regulations, Committees on Grain Standards, principal Board publications, and revenue and expenditure. The final item in the series is a chart showing the Board's organization and distribution of staff.

SECTION 1 — GRAIN PRODUCTION, QUALITY AND DISPOSITION

Grain Supplies and Disposition, 1967-68

The 1967-68 crop year witnessed a period of relatively low grain handlings compared with the outstanding achievements recorded during the past several crop years.

An estimated 844.2 million bushels of wheat, oats, barley, rye, flaxseed and rapeseed were carried over into the 1967-68 crop season with some 43% of this being held in on-farm storage. The 1967 crop included 592.9 million bushels of wheat, 304.2 of oats, 248.7 of barley, 12 of rye, 9.4 of flaxseed and 24.7 million of rapeseed. This production, combined with the inward carry-over, provided a total available stock of approximately 2,040 million bushels of grain to meet our domestic requirements and export trade commitments—some 200 million less than the comparable volume of a year ago.

Producers' marketings of the six principal grains and oilseeds combined—617.5 million bushels—were at their lowest level since the 1961-62 crop year. Only the deliveries of wheat (463 million bushels) and rapeseed (20 million) exceeded the average for the previous 10 years.

Export shipments of the six principal grains and oilseeds of 411 million bushels indicate a reduction of some 200 million compared with the 1966-67 figure. Bulk wheat clearances of 310.7 million bushels were the smallest volume recorded during the past five years.

The 1967-68 commercial disappearance comprised export clearances totaling 411 million bushels, plus a further 729.7 million bushels consumed in Canada for feed, seed, human food and industrial use. The July 31, 1968, carryover figure of 895.4 million bushels represents one of the heaviest year-end stocks on record but was still substantially below the all-time high carry-over of Canadian grain—1,120.3 million bushels—held on July 31, 1957. Approximately 41% of this year's closing stocks were held in on-farm storage.

Grades and Quality of Grain Marketed in 1967-68

This subsection of the report gives a brief summary of the grades and quality of Canada's various cereal grains and oil seeds that entered the domestic and world market during the last complete crop year. Each grain is dealt with individually. For most cereals and oil seeds, the grain marketed during a given crop year represents some new crop material together with unknown amounts of grain from

several previous harvests. Because of this, no mention will be made in this section of the report about specific growing conditions or harvest conditions prevailing in the crop year under review; the specific conditions reflected in the grades of each grain are noted. A brief summary of the quality of each grain is given.

Hard Red Spring Wheat. Well over 90% of the carlots of spring wheat moving forward to market during the crop year qualified for the top three grades—No. 1, 2 and 3 Northern. This is the highest proportion for many years, and is a consequence largely of very good harvest weather in two successive years, 1966 and 1967.

Protein levels for each of the grades of spring wheat marketed in the 1967-68 crop year were slightly higher than last year. The baking strength of No. 1 Northern wheat was somewhat stronger this year; grades No. 2 and 3 Northern were essentially unchanged, and No. 4 Northern was not quite as strong.

Cargo shipments of wheat from Atlantic coast ports were fractionally higher in protein content than Pacific coast exports. Atlantic shipments exhibited slightly greater baking strength than Pacific shipments, reflecting the differential in protein content. Export shipments of No. 2, 3 and 4 Northern wheats from Churchill were slightly lower in baking strength than the corresponding grades of Atlantic exports.

Amber Durum Wheat. The amount of durum wheat entering the top three grades during the 1967-68 crop year represented 76% of the total movement of this class. Durum wheat marketed was particularly well matured and virtually free of ergot, although it was lower in test weight than Durum was last year. Thousand-kernel weight for the top three grades was lower this year. Although pigment levels in the wheat were higher, semolina pigment values for all grades were lower than in the 1966-67 crop year. However, pigment levels in the macaroni were unchanged. Macaroni color for all grades was good and was at least equal to the levels for the previous crop year.

Barley. Basic quality of barley inspected was exceptionally high but, because of the extremely dry 1967 harvest, much barley that was otherwise sound classified as No. 1 Feed on account of peeled and broken damage. Approximately 20% of barley qualified for the malting grades. The new smut-resistant variety, Conquest, made up 58% of the No. 1 C.W. deliveries, 51% of the No. 2 C.W. deliveries and 28% of total deliveries.

Flaxseed. Over 93% of flaxseed inspected qualified for the No. 1 Canada Western grade, and there was a record low volume—3.6%—

of off-grade tough and damp. The oil content of flaxseed marketed this year averaged 43%, the same level as in the last two crop years. The protein content of the oil-free meal was about half a point higher this year.

Rapeseed. Approximately 96% of shipments were graded No. 1 Canada Rapeseed and only a few carlots were degraded on account of excessive admixtures of wild mustard seed. The oil content of the rapeseed marketed averaged 44.7%, slightly lower than for the previous crop year.

Domestic Mustard Seed. Quality of shipments was somewhat above average, but it was necessary to degrade some shipments because of excessive admixture of wild mustard and other conspicuous weed seeds.

Oats. Carlots of oats inspected included 33.9% in the milling grades of No. 3 Canada Western and higher, and 49% in grades No. 1 Feed and lower.

Rye. The above-average quality of rye is indicated by the fact that approximately 59% graded No. 2 Canada Western or higher, as compared with only 38% in 1966-67. The incidence of ergot and smudge was much lower than for many years.

Peas. Dry peas moved to market were of good average quality and were readily purchased by the processing trade.

Eastern Canadian Grains. The quality of the white winter wheat crop was slightly above average, with 75% of inspections grading No. 1 and 2 Canada Eastern and 19% grading Tough. Barley inspected was about average in quality, showing moderate weathering, and with 81% of shipments grading into the Canada Eastern malting grades. Of a total of 3,660 carlots of corn inspected, 2,740, or 75%, were either straight grade or extra dry No. 3 C.E. or higher. The average test weight of corn was 55 pounds per bushel, about a pound below normal, because of the poor maturing conditions in August and September of 1967. Although the yield of soybeans was down appreciably in 1967, crop quality was about average and quite uniform. Of 1,792 carlots inspected, 74% graded No. 3 Canada Yellow or better. Because of difficult marketing conditions, the dry bean crop did not move forward normally, and only 91 carlot inspections were made as compared with 182 in the previous crop year. The crop was of fair quality with only about 18% being in grades below No. 2 C.E.

Growing Conditions, Grades and Quality, 1968 Crop

Soil moisture reserves were low in the spring of 1968 as a consequence of the dry summer and fall in 1967 and a below-average

winter snowfall. Excessive spring rains fell in many parts of Manitoba and late snows blanketed some areas of Alberta. Seeding of cereal crops was delayed somewhat in these areas but in many areas of Saskatchewan seeding was accomplished earlier than for many years. Mid-summer rains were widespread and plentiful even in areas that had previously been dry. Temperatures throughout most of the growing season were below average. A general frost hit the central and northern growing areas in mid-August. Finally, harvest weather was the worst for many years with periodic rains and some heavy snows delaying the harvest and producing further damage to standing grain and especially to grain in the swath. Large amounts of grain will be degraded on account of mildew and sprouting. Large proportions of all cereal grains have to be artificially dried down to straight grade moisture levels for safe storage.

Red Spring Wheat. Western Canada's 1968 spring wheat crop amounted to 584.6 million bushels, about 5½% larger than the 1967 crop but well below the record 1966 crop of 778 million bushels. The bulk of the new crop is expected to enter the grades No. 3 Northern and lower. The distribution among the top grades is expected to be roughly as follows: No. 1 Northern—2%; No. 2 Northern—12%; No. 3 Northern—20%. Most of the crop will grade No. 4 Northern and No. 5, with appreciable amounts being degraded to feed wheat. The protein content of the 1968 hard red spring wheat crop was estimated to be 13.9%, about the same as the 1967 level (13.8%) and slightly higher than the long-term average figure of 13.6% for all 41 spring wheat crops from 1927 to 1967.

All grades of new-crop wheat are lower in test weight than export shipments made during the fourth quarter of the 1967-68 crop year. In comparison to fourth-quarter Pacific cargo shipments, new-crop wheat from the western prairies (Alberta and western Saskatchewan) grading No. 3 and 4 Northern and No. 5 is slightly higher in protein content; however, the No. 1 and 2 Northern wheat is slightly lower in protein. Eastern prairie wheat is slightly higher in protein than fourth-quarter Atlantic cargo shipments. Flour enzyme levels for the new-crop western prairie wheats are higher than the levels in recent Pacific shipments. Most of the grades of new-crop wheat are slightly lower in baking strength than the corresponding grade of recent cargo shipments, the one exception being the No. 3 Northern grade of the western prairies. New-crop wheat from the eastern prairies is slightly higher in protein content and baking strength than western prairie wheat of the same grade.

Amber Durum Wheat. The 1968 crop of Western Canadian amber durum wheat amounted to 44.4 million bushels, more than twice the

volume of the previous crop. The incidence of ergot, blackpoint and smudge is higher this year, as a result of cool wet weather during flowering. Other degrading factors include sprouting and mildew, and frost. Only small amounts of new-crop durum wheat will qualify for the top grades and the predominant grade is expected to be No. 4 C.W. The protein content of the 1968 durum wheat crop was estimated to be 13.4%, compared with 13.8% for the 1967 crop.

Compared with durum wheat cargoes exported during the fourth quarter of the 1967-68 crop year, the new-crop wheat is slightly lower in protein content but has the same proportion of vitreous kernels. It is lower in test weight and slightly lower in yellow pigment content, but the smaller loss of pigment during pasta-processing results in a brighter macaroni. Macaroni color is comparable except for the No. 4 C.W. grade where brightness is slightly lower.

Barley. Barley production in Western Canada in 1968 amounted to a record 292 million bushels. Unfortunately, however, the widespread mid-August frost and the extremely poor weather during harvesting seriously affected the appearance and consequently the grading pattern of the new-crop barley. A very large portion of the crop will enter the feed grades on account of mildew, ground tag from lying in the swath, severe weathering, and peeled and broken kernels. Because of excessively high moisture levels, large quantities of barley will have to be dried in farm-type or terminal elevator grain driers. The new-crop barley also presents problems associated with dormancy and water sensitivity. One fortunate circumstance this year was that Conquest was grown very widely. This newer variety appeared to withstand the poor harvest weather much better than the older varieties. Maltsters will have to be extremely careful in selecting their parcels of barley this year; fortunately, there was a considerable carry-over of 1967 crop barley of good malting quality for which there will be a heavy demand.

Flaxseed. Production of flaxseed in Western Canada in 1968 was 16.9 million bushels, nearly double the 1967 production. The poor harvest weather affected the flax crop to a somewhat lesser extent than the grain crops and it is expected that about 75% of the new crop will qualify for the grade No. 1 C.W. The oil content of the new-crop flaxseed averaged 42.8%, compared with 42.2% for the 1967 crop.

Rapeseed. Rapeseed production in 1968 was estimated to be 17.4 million bushels, a decrease of nearly 30% from the previous year's production. Contamination of rapeseed with small inseparable seeds is a problem again this year. Because of this, and also because of the very poor harvest weather, it is anticipated that significantly larger amounts of new-crop seed will enter the lower grades this

year. The oil content of the 1968 crop of rapeseed averages 46%, the highest level recorded in the 13-year period of annual harvest survey.

Eastern Winter Wheat. Eastern White Winter wheat production in 1968 was estimated to be 14.9 million bushels. Protein content in the new crop averaged 9.8%, as compared with the value of 10.2% for the 1967 crop. In marked contrast with the grade pattern for Western Canada in 1968, 90% of the harvest survey samples fell into grades No. 1 and 2 Canada Eastern White Winter Wheat.

Eastern Soybeans. The Board was requested by soybean growers in Eastern Canada to undertake a survey of protein content and oil content of the 1968 soybean crop. Representative samples of the crop were collected during the harvest period by the Chatham office of the Grain Inspection Division. These samples will be analyzed in the Research Laboratory early in 1969 and results made available to the trade.

Meetings of Committees on Grain Standards

As provided for in Section 25 of the Canada Grain Act, the Board constitutes Committees on Western and Eastern Grain Standards. The personnel of these Committees is listed in Appendix B.

The Committee on Western Grain Standards met in Winnipeg on November 7, 1968. The Chief Grain Inspector gave a full report to the Committee on crop conditions, grades, and visual factors affecting the quality of crops produced in 1968. The Chief Grain Inspector collected 1,220 two-bushel bags representing grain produced in Western Canada, and from these were constituted the 62 tentative standard and standard export samples presented to the Committee. Of these, 43 were established as standard samples of statutory grades, 9 as standard samples of commercial grades, and 10 as standard export samples. The Chief Chemist reported to the Committee in detail, the results of crop quality surveys and of quality tests on 1968 standard export samples of hard red spring wheat and amber durum wheat. The Laboratory also carried out detailed tests on 1968 standard samples of hard red spring wheat, amber durum wheat, barley, flax and rapeseed.

The Committee amended the definitions for "Recleaned Oats" grades, and approved minor amendments to the analysis of standard export wheat samples. It also received a Research Branch report from Dr. J. W. Morrison, who was appointed Dominion Cerealists to replace Dr. J. A. Anderson (retired).

The Committee on Eastern Grain Standards held two meetings

in 1968. At the first, held in London, Ont., on August 22, 18 samples of wheat, oats, barley and rye were established as standard samples of statutory grades, and three were established as standard samples of commercial grades. At the second meeting held in Montreal on October 31, 1968, 21 samples were established as standard samples of statutory grades for corn, beans, flaxseed, buckwheat and soybeans.

Variety Testing

The Inspection Division examined and reported to Canadian plant breeders on over 3,300 submitted samples of new varieties; and gave the Associate Committee on Grain Research of the National Research Council detailed descriptions of kernel characteristics of varieties of wheat and barley included in the 1968 co-operative variety tests.

To assist in the importation and internal control of unlicensed varieties of wheat and barley, identification and analysis services were provided on a co-operative basis to producers, their organizations, the grain trade and other divisions of the Department.

The Research Laboratory carries out a detailed program of quality testing on new varieties of hard red spring and amber durum wheats and malting barleys grown for the annual Co-operative Test. This quality testing is done in January and February of the year following the season in which the samples are actually grown. This year the program of quality tests included 25 varieties of hard red spring wheat, 16 varieties of amber durum wheat and 57 varieties of barley, all grown during the summer of 1967.

As a final stage in the hard red spring wheat Co-operative Test program during 1968, the Laboratory organized an elaborate Collaborative Study to determine the reaction of 26 cereal chemists and milling and baking technologists in six different countries to a new spring wheat variety that has shown promise in several years in the Canadian tests. The results of this study will be considered by the Associate Committee on Grain Research at its meeting in February, 1969.

Detailed milling and baking quality studies were made on a number of semi-dwarf spring wheats of Mexican origin. These wheats had been grown by the Canada Department of Agriculture in 1967 at three stations in Western Canada. Promising varieties from this series may enter the annual Co-operative Test for a more detailed assessment of quality. Similarly, quality tests were made on 38

varieties of amber durum wheat grown by the Canada Department of Agriculture. Finally, the Laboratory participated again this year in the annual wheat quality assessment program organized by the Crop Quality Council of the United States. A total of 54 samples representing five conventional spring wheat varieties, seven semi-dwarf spring wheat varieties and three winter wheat varieties grown at a number of stations in the upper midwest areas of the United States were tested this year.

SECTION 2 — DOCUMENTATION AND ELEVATOR OPERATIONS

Grain Documentation

Statistics. The Board requires from all licensees certain records and periodical reports of stocks and handlings, which are considered necessary for effective supervision and control. From returns submitted, the Statistics Division compiles and publishes basic statistics relating to the storage and movement of grain within the Canadian elevator system. A number of tables pertaining to the 1967-68 crop year are given in Appendix A, and a list of the principal statistical releases is included in Appendix C.

As the principal source of Canadian grain storage and handling statistics, the Division worked closely with the Canadian Wheat Board, the Agricultural Division of the Dominion Bureau of Statistics, other federal and provincial government offices, and internationally with the Commonwealth Economic Committee, the Food and Agriculture Organization of the United Nations, the International Wheat Council, and the Production and Marketing Branch of the United States Department of Agriculture.

Licensing and Bonding. The Canada Grain Act establishes the terms under which any elevator shall be licensed by the Board for the receipt or discharge of any western grain. The Act also specifies the conditions by which grain dealers, track buyers and grain commission merchants must be licensed in order to engage in contracts dealing with western grain by grade name. Licensees must be secured by bond, or otherwise, in the performance of all obligations imposed upon them by the Act.

The number of licences issued for country, terminal, mill and eastern elevators totaled 5,094 at August 1, 1968, compared with 5,130 a year ago. The decrease in public country elevator licences issued accounted for the major part of this drop. However, total licensed storage capacity rose from 682,187,010 bushels a year ago, to 697,478,060 bushels at August 1, 1968. The licensing in December 1967 of a new 10-million bushel facility at Port Cartier, Que., accounted for the major portion of this increase. Another factor involved was the new 5-million bushel semi-public terminal at North Vancouver, B.C., licensed in the spring of 1968. The public country elevator storage totals, reflecting the continuing policy of replacing obsolete elevators with new structures of larger capacity, rose 2.8 millions to a total capacity of 392.4 million bushels at the beginning of the 1968-69 crop year. Licensed mill elevators were the only sector

showing a decrease in capacity at August 1, 1968 from a year ago.

Guarantee bonds in the amount of \$34,950,335, executed by 14 surety companies, were deposited with the Board as security during the crop year 1967-68. In addition, negotiable government bonds in the amount of \$1,000 were deposited by one licensee in lieu of the usual form of surety bond.

The Statistics Division continued its responsibility for scrutiny of insurance coverage required to be maintained by semi-public terminal, eastern elevator and public country elevator licensees on grain stocks in their licensed premises.

Registration. Operators or managers of semi-public terminal and eastern elevators are required to issue warehouse receipts or transfer receipts for all grain taken into store. Such warehouse receipts and transfer receipts must be registered with the Board as to grade and quantity at the time of issue, and surrendered to the Board to be registered for cancellation when the grain they represent has been shipped out. Upon registration by the Board the warehouse receipts become negotiable documents and are used as collateral by the various grain companies in financing the movement of the grain. Registration service is provided at the headquarters office of the Statistics Division in Winnipeg and at suboffices in Vancouver and Montreal.

New Procedures. Documents and reports are received by the Statistics Division from other Board divisions, the Canadian Wheat Board, the grain companies and other organizations associated with the grain trade, and form the core of the Division's operations. In co-operation with the Canadian Wheat Board, the Division has continued to provide guidance in the integration of electronic data processing systems within the Canadian grain trade in order to facilitate the interchange of data. Eventually, this integrated, grain-information, flow system will permit an immediate evaluation of country, in transit, and terminal inventories and thereby enable the grain transportation industry to co-ordinate the loading, movement and unloading of grain, which will minimize paper work and make for a more efficient operation.

As a further step in the Division's combined telecommunication-computer-oriented program of data communication and records maintenance, documentation services were provided to terminal elevator licensees at Fort William-Port Arthur in 1968. The Lakehead extension involved the initial application to the elevator companies, other than those operated by the Crown, of the service of preparing and pre-registering terminal warehouse receipts. The standardization of this

document in punched-card form represented a major step towards document handling integration. These services are now in effect in the Canadian Government Elevator system, the National Harbours Board elevator at Churchill, and the Lakehead terminal elevators. A feasibility study was conducted to determine the relative cost advantage of extending this program to terminal operators located at the West Coast.

Country Elevators

Inspection of Elevators. The Board's four Assistant Commissioners, located at Winnipeg, Saskatoon, Regina and Edmonton, keep the Board in close touch with the operations of licensed country elevators in the Prairie Provinces.

During the year 1968, the Assistant Commissioners inspected 604 elevators in Manitoba, 791 in northern Saskatchewan, 598 in southern Saskatchewan and 636 in Alberta, a total of 2,629. This inspection included checks on scales, sieves, moisture meters and certain other equipment; deductions for shrinkage and Prairie Farm Assistance Act Levy, and posting of current Board regulations applying to country elevators.

In addition to this regular program of inspections, the Assistant Commissioners assisted in the investigation of producers' complaints and of reported infractions of the Board's regulations and orders. They also received and handled numerous inquiries from producers and elevator operators on various matters relating to country elevator operations.

Weigh-overs. The high level of grain stocks on hand during the crop year under review prevented companies from carrying out as extensive a weigh-over program as that undertaken during 1966-67. The results of these weigh-overs conform largely to the percentage distribution evident in previous years.

Elevators reporting	1967-68	1966-67
Shortages	503	460
Neither overages nor shortages	36	35
Overages of less than .25%	631	860
Overages of .25% to .50%	316	517
Overages over .50%	150	187
Total number of elevators weighed over	1,636	2,059

The Board reviewed the details of the weigh-overs and other related records and, when necessary, held discussions with company management. The Assistant Commissioners were given authority to

deal directly with elevator agents and superintendents where excessive overages or shortages had been reported.

Tariff of Charges. During the crop year 1967-68 the maximum elevation charge for handling of wheat at country elevators was 3¾ cents per bushel.

Terminal, Mill and Eastern Elevators

Services. All grain received at and shipped from the 45 licensed terminal elevators in the Western Division is sampled and graded by staff of the Inspection Division, and weighed under supervision of the Board's weighing staff. Inspection and weighing services are also provided at 27 mill elevators in the Western Division.

At licensed eastern elevators located at St. Lawrence River and Maritime ports grain loaded into vessels for export is sampled, inspected and certified. Other sampling, inspection and weighing services in the Eastern Division are provided only on request. The inspection unit at Chatham, Ont., samples and grades a considerable volume of eastern-grown grain for the grain trade in that area.

Information as to quantity of grain inspected and weighed during the 1967-68 crop year is given in Appendix A.

Weigh-overs. Whenever possible, official weigh-overs are conducted annually at licensed terminal and eastern elevators by groups of employees of the Weighing and Inspection Divisions. While a weigh-over is in progress, all normal elevator operations cease, and the grain-handling equipment and stocks of grain remain under the full control of the weigh-over crew. The contents of every storage bin are weighed, sampled for verification of grade and recorded. This work may take from a few days to several weeks, depending on the size of the elevator and the quantity and type of grain in store. The Statistics Division compiles totals of outstanding warehouse receipts and handlings by grain and grade, obtains statements of stocks on hand from the Weighing Division and summarizes the results of each weigh-over for review by the Board. The purpose of these audits is to enable the Board to determine whether the grain-handling operations at the elevator have resulted in any excessive overage or shortage in the various kinds and grades of grain.

During the 1967-68 crop year, 20 terminal and 6 eastern elevators were weighed over. Deferments into the following crop year were made at 12 terminal elevators at the Lakehead, 5 terminal elevators at other points, and at 25 eastern elevators. The Board found it necessary to grant these deferments to avoid delaying the handling and loading of grain required to meet export orders. However, it was pos-

sible to carry out 15 of these deferred weigh-overs before the end of December 1968.

Inspection of Equipment. All automatic samplers, scales and equipment for transferring grain to scales on receipt, and from scales for shipment in all licensed terminal elevators and serviced mill and eastern elevators were inspected periodically. In accordance with the special arrangement with the Standards Branch of the Department of Trade and Commerce, all scales in licensed terminal and eastern elevators were inspected, verified and certified by the Board's scale inspectors acting as inspectors under the Weights and Measures Act. Special inspections were made when any doubt arose as to the accuracy of a scale.

Plans and specifications for new elevator facilities and alterations to elevators and grain-handling equipment were examined before permission was given for commencement of work by elevator managers. When completed, new facilities and installations were inspected by officials of the Inspection and Weighing Divisions to ensure that no condition existed which might affect the efficiency of sampling or the accuracy of the weighing of grain received and shipped.

New Elevators and Equipment. The new terminal elevator at Vancouver, with a capacity of 5.5 million bushels, was completed and went into operation in April 1968. This addition to terminal facilities at the Pacific Coast will assist considerably in expediting the export movement of grain.

Information on a new annex at Prince Rupert is given under the heading "Canadian Government Elevators."

Senior officials of the Inspection and Weighing Divisions examine plans for new elevator construction before the Board gives permission for work to begin. They follow up by inspecting and approving storage bins, scales and other equipment installations before licences are issued to the elevator managers.

The managers of some terminal elevators at both the Lakehead and Pacific Coast have commenced a program of modifying manual scales to allow automatic control and operation. This new scale equipment is subjected to very thorough tests by the scale technician on the staff of the Weighing Division.

High-speed sample transport systems are being installed at a number of additional terminal elevators. This equipment is used to expedite the movement of grain samples from the sampling points

to the inspection offices located at the elevators, and is of considerable assistance to both the elevator operators and Inspection Division staff. Further such installations are expected during the next year.

Tariffs of Charges. During the crop year 1967-68, the maximum elevation charge for handling of wheat, oats and barley at licensed terminal elevators at the Lakehead, Pacific Coast and Churchill, was 3 $\frac{7}{8}$ cents per bushel.

Safety Program. During the latter part of 1967, the Board established a committee to conduct a study of working and safety conditions for Board employees located at grain elevators at terminal points. The three-man committee, headed by the Special Assistant to the Board, continued this work throughout 1968. Inspections were carried out at some 50 terminal and eastern elevators, including all the terminals at the Lakehead and in the Vancouver area. A detailed report was prepared on working and safety conditions at each of these elevators, together with a statement of improvements required to be made by the elevator management to meet an acceptable and uniform standard.

Local safety committees were established at Fort William-Port Arthur and at the Pacific Coast to maintain a continuing program of work safety instruction and enforcement, and liaison with elevator superintendents.

Most of the firms operating terminal and eastern elevators have co-operated with the committee and the Board by carrying out requested improvements to work areas where Board employees provide grain inspection and weighing services.

The committee met on several occasions with officials of the Canada Department of Labour to discuss proposed new regulations under the Canada Labour (Safety) Code. It is expected that these regulations will assist the Board in implementing its safety program at elevators.

Canadian Government Elevators

In accordance with Section 166 of the Canada Grain Act and Order-in-Council P.C. 1372 of August 19, 1925, the Board manages and operates five interior terminal elevators at Moose Jaw, Saskatoon, Calgary, Edmonton and Lethbridge, and one terminal elevator at Prince Rupert.

Handlings. During the crop year 1967-68, receipts totaled 12.5 million bushels, less than half of the near-record 26.3 million received the previous crop year. On the other hand, stocks at the interior

elevators remained at a high level, surpassing 15 million bushels, the highest they have been since 1955.

Wheat was again the principal grain handled, with receipts of 11.5 million bushels and shipments of 9.8 million bushels. The Calgary elevator handled over a million bushels of barley for domestic use. There were practically no handlings of rapeseed but a total of approximately 500,000 bushels of mustard seed moved through the three Alberta terminals.

Receipts and shipments at the various elevators were as follows:

Elevator	Capacity	Stocks Aug. 1 1967	Net receipts	Net shipments	Stocks July 31, 1968
— thousands of bushels —					
Moose Jaw	5,500	5,220	229	74	5,375
Saskatoon	5,500	5,341	1,206	1,129	5,418
Calgary	2,500	1,809	1,804	1,768	1,845
Edmonton	2,350	770	388	422	736
Lethbridge	1,250	992	106	137	961
Prince Rupert	1,250	313	8,741	8,289	765
TOTALS	18,350	14,445	12,474	11,819	15,100

Charges. Generally, during the 1967-68 crop year, charges were the maximum permitted under the Canada Grain Regulations. However, the rate for storage after the first five days on wheat, oats and barley at the interior elevators was 1/45c per bushel per day instead of the maximum allowable rate of 1/30.

New Annex at Prince Rupert. The new 1-million-bushel annex at Prince Rupert was completed during the fall of 1968 and was officially opened on October 18 by the Honorable H. A. Olson, Minister of Agriculture.

A contract was let for the automation of five of the scales at the Prince Rupert elevator, the first such installation at any of the Canadian Government Elevators.

Maintenance. The Repair and Reconstruction Division carried out some minor concrete restoration work during the summer of this year but this division has now been disbanded as a unit.

No major items of repair or maintenance were carried out this year.

Complaints and Inquiries

Producers' Complaints. During 1968, the Board and the Assistant Commissioners investigated 11 written complaints about producer

transactions with operators of licensed country elevators. Five of the complaints were settled satisfactorily; in four investigations no grounds were found for the complaint; and two complaints were still under investigation at the end of the year.

In addition, the Assistant Commissioners dealt with a variety of informal complaints and, when necessary, interviewed elevator agents and local superintendents to advise on correct procedure.

Cargo Shortage Complaints. The Board received a total of eight complaints about excessive shortages reported on vessel shipments unloaded at Eastern Canadian ports. Five of these shipments originated at Fort William and Port Arthur, and the Chief Weighmaster arranged for senior members of his staff to investigate the weighing and loading of the grain at the terminal elevators concerned. Where the shipments were unloaded at licensed eastern elevators, an official of the Weighing Division examined records and interviewed elevator personnel. The Chief Weighmaster reported his findings to the Board for review and forwarding to the complainants. In four complaints the operator of the unloading elevator adjusted the shortage with the shipper of the grain, but in the remaining four no cause could be found for the reported discrepancies in weights.

In addition, 14 complaints were received about outturn weights reported from overseas destinations. Investigations were conducted into the weighing of the shipments at the loading elevators in Canada and reports were forwarded to the complainants. The Board also reviewed information supplied by the complainants on unload procedures and equipment at the overseas ports.

Overseas Quality Complaints. A total of 12 complaints were received about various aspects of the quality of grain shipped to overseas destinations. Thorough investigations were carried out by the Inspection Division or the Research Laboratory, depending on the nature of the complaint. Official samples taken from the shipments at the time of loading were studied and subjected to special tests. Where possible, comparisons were made with samples taken by the importers at the time of unloading overseas. Detailed reports of the Board's investigations were sent to complainants for their information.

Prosecutions and Penalties. During 1968, at the request of the Board, the R.C.M.P. filed charges in court in connection with an alleged breach of Section 74 of the Canada Grain Regulations relating to delivery of mercurial-treated grain to a licensed country elevator. Hearing of this case by the court is expected early in 1969. Another case of this nature was referred to the Department of Justice for a

detailed review of evidence and possible prosecution. In addition to these cases, several others were investigated but there was insufficient evidence to warrant prosecution.

In another area of control, penalties totaling \$2,450 were levied and collected by the Board for breaches of a Board order about car-load shipments of high-moisture grain.

SECTION 3 — RESEARCH, INFORMATION AND OTHER SERVICES

Research

Laboratory Research. Through its program of basic and applied research, the Laboratory has continued its systematic enquiry into questions related to the quality of Canadian grain. In studies on bread wheat, low molecular weight sulfhydryl peptides were found to be the main reactants involved in the improver reaction of flour, and the distribution of these peptides in different fractions of wheat and flour was determined. Analysis of the N-terminal amino acids of wheat alpha amylase enzyme was carried out and differences were established between free beta amylase from malted wheat and the bound enzyme released from glutenin. A proteolytic enzyme from malted wheat also was isolated.

An efficient laboratory air classifier, capable of producing flour fractions ranging up to 30 per cent in protein content, has been developed. A study was initiated to investigate the effect of protein content on the milling and baking properties of hard red spring wheat within grades and for different provinces. A special mill stand was developed for the study of roll speeds, roll differentials, roll surfaces, and feed rates and their effects on starch damage in flour. A laboratory-scale mixing unit was designed and built for studying both continuous and batch mechanical dough development breadmaking methods. Studies using the Brabender maturograph and oven-rise recorder to determine gas production and gas retention by doughs during fermentation, proofing and baking, have continued to produce interesting information. Facilities of the baking section were expanded to provide a routine testing laboratory, a semi-routine section for mechanical dough development methods, a technical services section for studying different formulas and methods used by market areas, and a research laboratory for examining new aspects and applications of baking technology.

Recent research on durum wheat has been mainly on factors and components of semolina affecting the cooking quality of spaghetti. The type of gluten and the changes that it undergoes during processing are now under investigation.

Studies of enzyme systems of barley and malt and changes in these have been expanded to include alpha and beta amylases and cytase. Chromatographic procedures have been developed for separation of these three types of enzyme systems and their components. Beta amylase has four components, two of which are present in barley and two in malt. Recent studies of grain development show that beta amylase appears early in grain formation and changes

from a soluble to an insoluble form as the kernel ripens. Studies on alpha amylase are being facilitated by preparation of specific substrates that are acted on by this enzyme only. The cytase system is regarded as important in modification of endosperm during malting. One of its components, separated by new chromatographic techniques, has been purified and its mode of action on a beta glucan is being studied. Experiments on the duration of initial wet steep period in the malting process have shown that modification of malt progressively improved as the initial steep period was increased from 6 to 18 hours before introduction of air rest periods. The duration of the initial steep greatly affects enzyme development, especially beta amylase activity, which decreased during steeping and increased in malting only after the 18-hour steep.

Statistical and Economic Studies. Research economists of the Statistics Division conducted economic and analytical studies on licence conditions, handling and storage tariffs, and the grading and weighing of grain, for the Board and other divisions. To assist the Board in its examination of handling and storage tariffs at licensed elevators, research economists of the Division carried out a detailed cost study in the development of a new approach to rate determination. A major research project was also undertaken to provide current information and analysis on the protein variability of export wheat cargoes shipped from the port of Vancouver.

The Director of the Division continued to represent the Board in the Grain Transportation Technical Study Group. This body includes all elements of the grain handling industry—government agencies, elevator companies and major railways—joined together in a common research effort to co-ordinate and plan Canada's western grain transportation system. The Director also chaired two subcommittees of the Technical Group, one dealing with all aspects of documents, records, reports and data communication within the western grain trade, and the other concerned with reducing the variability in the level of protein in wheat clearances from the Pacific Coast.

Information Program

Publications. Statistics on the movement and storage of grain within the licensed elevator system were disseminated on a regular basis through a series of major bulletins issued by the Statistics Division. These included a weekly summary of grain handlings, indicating receipts, shipments and current inventory; a monthly and an annual review of Canadian grain exports; a detailed analysis of licensed storage facilities, showing locations and capacities at the beginning of the crop year; an annual review of the supply and disposition of Canadian grain in licensed elevators; and an annual report of grain marketings at individual country elevator delivery points.

The Research Laboratory publishes a separate annual report detailing its activities. However, brief mention of the highlights of the Laboratory activities for 1968 has been made in appropriate sections of this report.

The Board's quarterly cargo bulletins provided up-to-date quality data for the average of each grade of hard red spring and amber durum wheat exported during each three-month period from Atlantic and from Pacific ports. Also, the annual estimate of quality of Western Canadian hard red spring wheat, amber durum wheat, barley, flax and rapeseed was published as usual, in a series of three crop bulletins. These crop bulletins, together with the hard red spring wheat protein map, were widely distributed in Canada and throughout the world during 1968. Quality data for the new crop of western cereal grains was presented to the Committee on Western Grain Standards at its meeting in Winnipeg early in November.

Twelve papers describing results of the Laboratory research were published in scientific and technical journals during 1968.

The Board issued bulletins to country elevator operators, grain producers and provincial agricultural representatives, outlining precautions to be observed to avoid lowering the quality of high-moisture grain being dried at country points in the Prairie Provinces.

Meetings. Members of the Board and senior officials accepted a number of invitations to address annual meetings of producer organizations and to discuss topics of current interest relating to the Board's work. In addition, they attended meetings held by several agricultural and other organizations including the Agricultural Institute of Canada, High Energy Grain Symposium, National Farm and Business Forum, National Grains Council and Hudson Bay Route Association.

Dr. Irvine and various members of the Laboratory staff attended a total of nine scientific and technical conferences. A complete listing is included in the Laboratory's 1968 Annual Report.

The Board held meetings at Toronto on October 30, 1968, and at Winnipeg on November 6, 1968, at which interested parties were invited to present briefs relating to maximum tariffs of charges for handling of grain at licensed eastern, country and terminal elevators.

The significant result of the meetings was the Board's announcement that effective April 1, 1969, maximum elevation charges at terminal elevators would be increased by one-half cent per bushel. It was also announced that a new format, including some increased rates, would be introduced for the eastern elevator maximum tariff of charges.

The Board convened regular meetings of the Committees on Western and Eastern Grain Standards. During these meetings, the members of the Committees who represent various segments of the grain trade, were provided with detailed information on current grain crops and recent changes in grain grading procedure.

Overseas Visits. In May and June 1968, a mission headed by Commissioner Svoboda visited the U.S.S.R., Czechoslovakia, Poland, Bulgaria and Yugoslavia. Other members of the mission were Mr. V. Martens, Secretary of the Board, Dr. G. N. Irvine, Director of the Research Laboratory, Mr. A. Presber, representing the Canadian Wheat Board, and Dr. A. E. Hannah, Director of the Winnipeg Research Station, Canada Department of Agriculture. The group visited principal ports where grain is received and handled, grain import organizations, research institutes, flour mills, bakeries and farms, and held discussions with government and technical personnel.

Earlier in the year the Chief Commissioner visited a number of centres in France and Italy where Canadian grain is handled and processed.

In November and December, the Board sent a mission to Australia to exchange information on grain production, grading, storage, transportation and general handling. The mission was composed of Commissioner C. L. Shuttleworth; Mr. M. M. Ainslie, the Board's Chief Grain Inspector, and Dr. K. H. Tipples, a member of the staff of the Board's Research Laboratory.

Dr. I. Hlynka, Assistant Director of the Research Laboratory, attended the Fifth International Congress on Rheology in Kyoto, Japan. Following this meeting, Dr. Hlynka was joined by Dr. W. O. S. Meredith for a series of technical service visits to Japanese millers and bakers, maltsters and brewers and rapeseed processors. During the course of this visit, the Laboratory scientists gave a series of lectures to cereal chemists, technologists, university graduate students and other persons in the grain trade. Dr. R. Tkachuk, a senior research scientist on the Laboratory staff, is presently in Melbourne, Australia, for a year of postdoctorate study under Dr. Pehr Edman of St. Vincents School of Medical Research.

Tours of Board Facilities. During the year many individuals and groups visited the Board and toured its inspection and laboratory facilities, to discuss matters related to the grain trade and to obtain first hand information about the functions and services of the Board. These visitors included missions sponsored by the Canadian Wheat Board from the United Kingdom, Japan, Sweden, Brazil, France, Hungary and Ghana.

Special arrangements were made to provide tours and lecture sessions for groups of country elevator agents, university students in agriculture and Assistant Trade Commissioners-in-Training from the Department of Trade and Commerce.

Films. Production of a new film entitled "Canadian Wheat" was completed in 1968. This was a joint project of the Board of Grain Commissioners and the Canadian Wheat Board. It deals mainly with the production and marketing of wheat in Canada and the methods used to achieve quality control in wheat for export to overseas millers. It should assist in promoting export sales. The film will be available for distribution and showing to interested groups throughout Canada and overseas.

Mobile Exhibit. The new vehicle, which had been obtained late in 1967, was fitted with up-to-date exhibit material. Emphasis was on a display of grain samples illustrating varieties and grades, and the numerous factors that are considered in grading grain. The object is to provide detailed information and guidance on varieties and grading to producers, elevator agents and local company superintendents.

During the summer of 1968, the exhibit was placed on display at 13 agricultural fairs in Manitoba and Saskatchewan. For 10 days during July, it was located at the Calgary Exhibition "Salute to Agriculture" and seen by an estimated 24,000 persons. Members of the Board's Inspection Division staff were in attendance to give information and advice to interested parties. The grain grading exhibit has always been popular and quite successful from a training point of view.

Other Services

Pesticide Residue Surveys. The very important work of assaying grain samples for possible residues of pesticide treatment materials has been continued and expanded in the Research Laboratory. During 1968, a series of tests were made on samples of 1967 crop wheat from most of the producing areas in Western Canada. Not one of the more than 200 samples analyzed showed any significant traces of organochlorine pesticide residues.

About 150 samples of individual grain parcels, suspected of containing treated seed, were submitted to the Laboratory by the Grain Inspection Division for residue analyses.

Entomological Surveys. The Board's Entomologist conducted regular inspections of licensed terminal and eastern elevators during the year. Sanitation was maintained at a generally satisfactory level in all terminal elevators. Several isolated infestations occurred during

the year but were quickly controlled by the use of appropriate fumigants and housekeeping measures. Extra precautions were taken at terminals at Fort William and Port Arthur during the extended grain handlers' strike in that area and no difficulty was encountered when the grain movement resumed. The strike of Seaway workers also interrupted grain movement but extra vigilance in terminals affected by the shutdown prevented any insect problems.

During the 1968 season of navigation, mandatory inspection of U.S. corn entering the Port of Montreal indicated that infestation was present in varying degrees of severity in approximately half the cargoes unloaded. The problem was complicated for Canadian grain handlers by the practice of shipping quantities of this grain by truck to domestic markets in Eastern Canada, often before fumigation measures could be carried out in the receiving terminals. It would appear to be advisable for all eastern elevators handling U.S. corn to arrange for inspection of every shipment on arrival, as a precaution against spreading insect infestations to Canadian grain handling facilities. Current practices in handling Canadian eastern white wheat include a mandatory fumigation when this grain is received into storage in many of the terminals in Eastern Canada. This procedure has reduced the danger of such grain going out of condition in long-term storage and has not caused any problem with pesticide residues.

Studies relating to the fumigation of grain in transit in railway cars are continuing and certain fumigation products are now giving good results in treatment of grain in moving or stationary boxcars.

The wet autumn greatly prolonged harvesting throughout the prairies and created problems of insect infestations for farmers and country elevator agents. In many locations, grain sprouted in the swath and the mould growth that developed on the heads was responsible for a rapid increase in the numbers of fungus beetles. These insects were picked up by the combines and ended up in the storage bins. Chemical controls were not required, however, as the beetles died off when the moisture content and the mould growth on the kernels was reduced during storage.

Increased attention to rodent control around country elevators reduced the rat population significantly in many areas, with a corresponding reduction in the number of reports of grain contamination.

In 1968, a total of 40 carlots of grain were found to be infested with insects at the time of unloading, compared with 72 in 1967. All such infested grain was fumigated as it was received into the terminals.

Moisture Testing Equipment Control. In a continuing program organized by the Research Laboratory, Model 919 moisture meters

(both 3 inch and 3½-inch cell instruments) and Brown Duvel oil-distillation moisture testing units in use in offices of the Grain Inspection Division across Canada were checked regularly throughout the year. Servicing, and checking and adjusting of the calibration of these meters was performed in the Laboratory when necessary. In addition, moisture-testing equipment in inspection offices in Montreal, Toronto and Vancouver, was inspected and checked on site by a Laboratory technician. The Laboratory also undertook detailed studies to prepare calibration charts for use in determining the moisture of cereal grains using the Model 919 moisture meter.

Grain Appeal Tribunal. The Grain Appeal Tribunal at Winnipeg deals with all appeals received pertaining to the unload grades of cars officially inspected in the Western Division. The Chairman, who is appointed by the Minister of Agriculture, is a member of the Board's staff, but is completely independent of the Inspection Division. The other eight members are senior employees of various companies that operate licensed elevators. These men are all competent grain inspectors who have been recommended to the Board for appointment to the Tribunal. Each sample placed before the Tribunal is examined by two members, in addition to the Chairman, and the decision of the Tribunal is final. The members have no knowledge of the origin of any sample under review.

During the crop year 1967-68, a total of 209 appeals were dealt with and the grades assigned by the Inspection Division were sustained in 199 of them.

Quality Tests on Farm Dried Grain. Weather during the 1968 harvest was exceptionally poor. Periodic heavy rains and some heavy snows, particularly in Alberta, delayed harvesting and produced considerable damage in grain lying in the swath. Much of the 1968 crop was harvested in a tough or damp condition. Large amounts of grain have been and are continuing to be dried on the farm to moisture levels low enough that the grain can be safely stored. The Research Laboratory reinstituted a program of quality testing on farm-dried wheat to enable farmers to operate driers under conditions that would not impair the milling and baking quality of the wheat. To cope with the volume of work required, the Laboratory found it necessary to hire temporary additional staff.

Grading Services to Producers. A total of 23,155 'Subject to Grade and Dockage' samples, submitted jointly by producers and country elevator agents, were inspected in the 1967-68 crop year. This service of the Inspection Division is provided without charge by the Board to facilitate settlements where differences of opinion in the matter of grade and dockage exist at the country elevator.

In 1967-68, the Chief Grain Inspector received 31 requests from individual producers to establish whether or not the identity of 'special bin' grain had been preserved in handling through country elevators. Official carlot unload samples were compared with special bin receiving samples preserved at the country elevator. In six cases it was established that the identity of the farmers' grain had not been preserved, and satisfactory settlements were effected between the parties concerned.

Services to Other Organizations. The Statistics Division continued to function as a statistical support agency for the Canadian Wheat Board, supplying to that Board all major reports and publications compiled by the Division, particularly those related to country elevator operations and the positioning of grain stocks. This office and the Canadian Wheat Board also co-operated in the exchange of information for use by electronic data processing equipment.

The Division served as the prime source of grain handling statistics pertaining to the licensed elevator system for incorporation in a variety of statistical releases by the Dominion Bureau of Statistics. In particular, this office supplied the Agricultural Division of the Bureau with the primary material for the joint annual publication, "Grain Trade of Canada".

Some of the Research Laboratory's specialized facilities for research in cereal chemistry were made available to cereal chemists and technologists from other countries. During the year, three scientists engaged in periods of study and research in the Laboratory.

The Director of the Laboratory and two of his senior assistants served as Honorary Professors of Plant Science in the Faculty of Graduate Studies and Research at the University of Manitoba. They gave lectures and other professional assistance to graduate students in the area of grain science and technology.

Special Acts Administration. Under the provisions of the Prairie Farm Assistance Act, the Board continued to collect the 1 per cent levy on grain purchased by licensees under the Canada Grain Act. During the 1967-68 crop year the amount collected was \$10,106,186, a decrease of \$1,567,897 from collections recorded for the previous crop year. Levy collections by the Board since the inception of the Act (August 1, 1939) to July 31, 1968, total \$196,009,171. Licensees are required to file with the Board's Statistics Division, monthly and annual declarations summarizing the value of grain purchases and the amount of levy collected on such purchases.

Section 5 of the Inland Water Freight Rates Act gives the Board authority to establish maximum freight rates for the carriage of

grain from Fort William or Port Arthur to other specified ports in Eastern Canada. No maximum rates have been set by the Board since the existing schedule was revoked by Order No. 21 on March 10, 1959. The Statistics Division receives and scrutinizes copies of vessel charter confirmations covering all lake grain cargoes shipped from Fort William/Port Arthur during the navigation season, and compiles summaries of weighted average lake freight rates to keep the Board informed on current trends in rate levels.

SECTION 4 — PERSONNEL ADMINISTRATION

Three major and distinct factors during the period under review had the effect of adding considerably to the function and responsibility of the Board's Personnel Administration. The first two were the result of decentralization, that is, actual delegation of authority to perform certain staffing actions and authority to classify positions; the third was the implementation of collective agreements with all its ramifications.

Staffing. The total staff, exclusive of the Canadian Government Elevators, was 834 at December 31, 1968, compared with 825 at the end of 1967.

The staff of the Canadian Government Elevators totaled 235 at December 31, 1968, an increase of 46 over the total at December 31, 1967. This increase was due to the employment of casual personnel required for the expanded grain-drying operations.

A grain handlers' strike at the Lakehead during the year resulted in a stoppage of grain movement in that sector. A total of 87 seasonal employees were laid off but most of these were recalled to duty after the elevators resumed normal operations.

Mr. C. J. Brownscombe, Board Registrar, retired after 50 years of service. Mr. J. Strachan, Weighman-in-charge for the Winnipeg area, retired after having been on the Board's staff for 45 years. Awards were received by seven employees in recognition of 25 years in the Public Service of Canada.

Collective Agreements. During 1968 Public Service collective agreements were concluded for the Chemistry Group, General Labour and Trades Group, and General Services Group. In the Chemistry Group only a few Board employees were involved. However, in the other two groups some 470 personnel were affected. The contracts created many significant changes in procedures and policies and included reclassification of all positions and incumbents. Another notable change was the conversion of pay to an hourly rate, with regional adjustments. Implementation of the contracts involved numerous difficulties in interpretation of various clauses affecting both small and large groups of employees located at 16 centres from coast to coast.

Preliminary work commenced on agreements for the grain inspectors of the Inspection Division and for the technicians of the Research Laboratory. It is expected that these will be concluded and implemented early in 1969.

Staff Training and Development. The level of development and training was well maintained in all divisions. There was considerably more activity in the area of instructional seminars and meetings involving line management and other senior staff. This activity mainly reflected decentralization of authority and the effects of collective bargaining.

During the year, 16 personnel took educational courses related to their duties and costs were partly subsidized from public funds. Four employees are engaged in daily French language studies.

The Inspection Division continued a well-organized plan of studies and examinations for grain inspectors at their various levels. Two formal training seminars were held for senior inspectors.

The Weighing Division made use of its new training manual during regular group discussions. A seminar was held at the Lakehead to discuss automation of scales and other grain elevator equipment; and also, to interpret the new labor contract and discuss its effects.

APPENDIX A

Grain Statistics and Quality

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A-1 — Supply and Disposition of Canadian Grain, Crop Year 1967-68

	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed	Total
SUPPLY	— in thousands of bushels —						
Carry-over July 31, 1967	576,751	109,791	131,751	8,295	11,831	5,828	844,247
Production in 1967	592,900	304,200	248,700	12,000	9,400	24,700	1,191,900
Total Supply	1,169,651	413,991	380,451	20,295	21,231	30,528	2,036,147
DISPOSITION							
Exports *	335,643	3,227	41,405	4,760	13,721	12,285	411,041
Consumed in Canada	168,498	333,813	208,129	8,077	2,832	8,320	729,669
Total disposition	504,141	337,040	249,534	12,837	16,553	20,605	1,140,710
CARRY-OVER (July 31, 1968)							
On farms (estimated)	236,000	55,000	71,300	1,900	600	2,434	367,234
In country, private, terminal and mill elevators	351,916	17,417	54,756	4,684	3,121	6,512	438,406
In store and afloat to eastern elevators	48,667	2,753	2,357	293	734	49	54,853
In eastern flour mills	2,190	76	—	—	—	—	2,266
In transit by rail - Eastern and Western Divisions	26,737	1,705	2,504	383	223	928	32,480
In store and in transit to the U.S.A.	—	—	—	198	—	—	198
Total in store July 31, 1968	665,510	76,951	130,917	7,458	4,678	9,923	895,437

* Includes 24,212,965 bushels of wheat flour, 760,698 bushels of bagged seed wheat, 95,497 bushels of rolled oats and oatmeal, 5,322,006 bushels of barley malt and 1,110,419 bushels of linseed oil.

A-2 — Licences in Force and Storage Capacity, August 1, 1968 and 1967

Type of licence	Licences in force		Licensed storage capacity	
	August 1		August 1	
	1968	1967	1968	1967
Country elevator	5,001	5,034	392,407,900	389,675,850
Terminal and mill elevator	62	65	172,492,860	170,145,860
Eastern elevator	31	31	132,577,300	122,365,300
Track buyer, commission merchant and grain dealer	31	30	†	†
Totals	5,125	5,160	697,478,060	682,187,010

† These licences do not cover grain storage facilities.

A-3 — Inward Carlot Inspections of Western Grain, Crop Year 1967-68

Grade	Carlots	Percentage of total wheat inspected
WHEAT		
1 Manitoba Northern	56,790	29.7
2 Manitoba Northern	88,499	46.2
3 Manitoba Northern	30,149	15.7
Tough 1 to 3 Manitoba Northern	2,230	1.2
4 Manitoba Northern	6,060	3.2
Tough 4 Manitoba Northern	1,521	.8
4 Special	4	*
No. 5	870	.4
No. 6	276	.1
Feed	40	*
Garnet	571	.3
Tough Others	965	.5
Damp	331	.2
Smutty	39	*
Rejected	2,999	1.6
Others Red Spring	144	.1
Total red spring wheat	191,488	100.0
1 Canada Western Amber Durum	2,501	25.1
2 Canada Western Amber Durum	2,735	27.4
3 Canada Western Amber Durum	2,062	20.7
Extra 4 Canada Western Amber Durum	1,960	19.7
4 Canada Western Amber Durum	275	2.8
5 Canada Western Amber Durum	17	.2
6 Canada Western Amber Durum	6	.1
Tough Durum	66	.6
Others Durum	342	3.4
Total amber durum wheat	9,964	100.0
Total soft white spring	231	—
Total mixed wheat	131	—
Total Alberta winter wheat	2,019	—
Total all wheats	203,833	100.0

* Less than 0.05%.

A-3 — Inward Carlot Inspection of Western Grain, Crop Year 1967-68
Continued

Grade	Carlots	Percentage
OATS		
1 Canada Western	2	*
2 Canada Western	111	.8
Extra 3 Canada Western	954	7.1
3 Canada Western	3,475	26.0
Extra 1 Feed	2,296	17.1
1 Feed	5,358	40.0
2 Feed	824	6.2
3 Feed	139	1.0
Mixed Feed	20	.2
Tough	86	.6
Damp	11	.1
Rejected	54	.4
Others	62	.5
Total oats	13,392	100.0
BARLEY		
1 Canada Western Six-Row	44	.1
2 Canada Western Six-Row	1,517	4.1
3 Canada Western Six-Row	4,849	13.0
Tough 1 to 3 Canada Western Six-Row	100	.3
1 Canada Western Two-Row	33	.1
2 Canada Western Two-Row	570	1.5
Tough 1 to 3 Canada Western Two-Row	9	*
3 Canada Western Two-Row	1,239	3.3
1 Feed	21,422	57.5
2 Feed	5,244	14.1
3 Feed	623	1.7
Tough Others	1,172	3.1
Damp	165	.5
Rejected	217	.6
Others	45	.1
Total barley	37,249	100.0

* Less than 0.05%.

A-3 — Inward Carlot Inspections of Western Grain, Crop Year 1967-68 Concluded

Grade	Carlots	Percentage
RYE		
1 Canada Western	12	.3
2 Canada Western	2,077	58.6
3 Canada Western	1,158	32.7
4 Canada Western	90	2.5
Ergoty	106	3.0
Tough	95	2.7
Damp	—	—
Rejected	5	.1
Others	3	.1
Total rye	3,546	100.0
FLAXSEED		
1 Canada Western	6,180	93.2
2 Canada Western	39	.6
3 Canada Western	68	1.0
4 Canada Western	8	.1
Tough	183	2.8
Damp	51	.8
Rejected	17	.2
Others	84	1.3
Total flaxseed	6,630	100.0
Corn	40	—
Sunflower Seed	—	—
Mixed Grain	299	—
Screenings	248	—
Buckwheat	257	—
Soybeans	2	—
Peas	39	—
Rapeseed	7,422	—
Sample Grain	98	—
Safflower Seed	—	—
Mustard Seed	881	—
Condemned Grain	61	—
	9,347	—
Grand total	273,997	—

**A-4 — Samples of Western Grain “Subject to Grade and Dockage”
Inspected Crop Year 1967-68, Compared with Crop Year 1966-67**

Point	1967-68	1966-67
	Number of samples	
Winnipeg	8,871	11,548
Calgary	4,891	3,167
Edmonton	2,313	2,951
Moose Jaw	26	103
Saskatoon	1,091	1,036
Lethbridge	5,963	6,065
Totals	23,155	24,870

**A-5 — Inward Carlot Re-Inspections of Western Grain,
Crop Year 1967-68**

Point	Inspected	Re- inspected	Un- changed	Grades raised	Grades lowered	Dockage raised	Dock- age lowered
Fort William	137,024	7,552	6,419	1,057	49	9	18
Winnipeg	7,964	745	613	119	10	1	2
Churchill	11,291	326	273	51	2	—	—
Moose Jaw	139	10	10	—	—	—	—
Saskatoon	5,256	330	290	32	8	—	—
Calgary	4,567	318	259	50	8	—	1
Edmonton	776	48	43	5	—	—	—
Medicine Hat	2,497	103	71	24	8	—	—
Lethbridge	336	5	5	—	—	—	—
Prince Rupert	4,871	366	356	9	1	—	—
Vancouver	99,276	8,707	7,673	969	28	12	25
Totals	273,997	18,510	16,012	2,316	114	22	46
Percentage of total carlots	100.0	6.8	5.8	.9	.04	*	.02

* Less than 0.05%.

A-6 — Outward Carlot Inspections of Western Grain at Terminal and Mill Elevators, Crop Year 1967-68

Grain	Winnipeg	Fort William and Port Arthur		Calgary	Edmonton	Moose Jaw
Wheat	128	924	55	27	63	
Oats	298	1,936	31	144	23	
Barley	176	1,560	129	71	6	
Flaxseed	3	10	—	—	—	
Rye	1	21	1	—	—	
Mixed grain	29	53	21	3	6	
Corn	—	—	—	—	—	
Buckwheat	—	—	—	—	—	
Peas	23	—	—	—	—	
Screenings	178	3,954	129	9	85	
Rapeseed	—	126	—	10	—	
Sample feed grain	16	—	—	—	—	
Mustard seed	5	—	161	133	—	
Sample grain	27	21	23	—	6	
Totals	884	8,605	550	397	189	

	Saskatoon	Lethbridge	Medicine Hat	Vancouver, Victoria and Prince Rupert		Churchill
Wheat	623	43	11	56	—	—
Oats	73	—	—	246	—	—
Barley	—	—	1	2	—	—
Flaxseed	—	1	—	—	—	—
Rye	—	—	—	12	—	—
Mixed grain	19	3	5	17	—	—
Corn	—	—	—	—	—	—
Buckwheat	—	—	—	—	—	—
Peas	—	—	—	—	—	—
Screenings	272	35	15	1,039	—	—
Rapeseed	272	—	—	29	—	—
Sample feed grain	—	—	—	—	—	—
Mustard seed	—	64	—	—	—	—
Sample grain	—	—	12	—	—	—
Totals	1,259	146	44	1,401	—	—

A-7 — Carlot Inspections of Eastern Grain, Crop Year 1967-68

Grade	Montreal	Toronto	Chatham	Total
WHEAT				
1 Canada Eastern White Winter	—	1	188	189
2 Canada Eastern White Winter	—	65	1,499	1,564
3 Canada Eastern White Winter	—	3	50	53
4 Canada Eastern White Winter	—	—	10	10
5 Canada Eastern White Winter	—	—	3	3
1 Canada Eastern Mixed Winter	—	1	4	5
2 Canada Eastern Mixed Winter	—	—	9	9
Tough	—	69	388	457
Smutty	—	—	2	2
Damp	—	—	2	2
Sample	—	1	24	25
Totals	—	140	2,179	2,319
BARLEY				
3 Canada Eastern Six Row	—	—	204	204
3 Canada Eastern Two Row	—	—	56	56
4 Canada Eastern	—	1	35	36
Tough	—	—	23	23
Totals	—	1	318	319
RYE				
2 Canada Eastern	—	—	2	2
3 Canada Eastern	—	—	2	2
4 Canada Eastern	—	—	3	3
Tough	—	—	4	4
Damp	—	—	3	3
Sample	—	—	1	1
Totals	—	—	15	15

**A-7 — Carlot Inspections of Eastern Grain, Crop Year 1967-68
Concluded**

Grade	Montreal	Toronto	Chatham	Total
CORN				
Extra Dry 1 Canada Eastern Yellow	—	—	544	544
1 Canada Eastern Yellow	—	1	643	644
Extra Dry 2 Canada Eastern Yellow	—	—	396	396
2 Canada Eastern Yellow	—	1	765	766
Extra Dry 3 Canada Eastern Yellow	—	—	132	132
3 Canada Eastern Yellow	—	1	257	258
Extra Dry 4 Canada Eastern Yellow	—	—	33	33
4 Canada Eastern Yellow	—	—	48	48
Extra Dry 5 Canada Eastern Yellow	—	—	6	6
5 Canada Eastern Yellow	—	—	12	12
Tough	—	—	224	224
Damp	—	1	210	211
Moist	—	1	279	280
Wet	—	1	96	97
Sample	—	3	6	9
Totals	—	9	3,651	3,660

BEANS				
Extra 1 Canada Eastern Pea	—	—	1	1
1 Canada Eastern Pea	—	—	66	66
2 Canada Eastern Pea	—	—	5	5
3 Canada Eastern Pea	—	—	9	9
4 Canada Eastern Pea	—	—	6	6
3 Canada Eastern Yellow Eye	—	—	1	1
1 Canada Eastern Light Red Kidney	—	—	3	3
Totals	—	—	91	91

SOYBEANS				
1 Canada Yellow	—	8	591	599
2 Canada Yellow	—	20	655	675
3 Canada Yellow	—	2	24	26
4 Canada Yellow	—	—	2	2
Tough	—	—	296	296
Damp	—	—	162	162
Moist	—	—	21	21
Wet	—	1	8	9
Sample	—	1	1	2
Totals	—	32	1,760	1,792
Totals, all grains	—	182	8,014	8,196

A-8 — Inspections of Eastern Grain in Cargoes, Bins, Trucks or Warehouses, Crop Year 1967-68

Grain	Montreal	Toronto	Chatham	Total
		— bushels —		
Wheat	1,372,041	—	2,358,367	3,730,408
Oats	172,794	—	—	172,794
Barley	—	—	1,100	1,100
Buckwheat	27,941	—	—	27,941
Corn	—	—	1,221,997	1,221,997
Beans	—	—	613,536	613,536
Soybeans	—	—	1,368,834	1,368,834
Totals	1,572,776	—	5,563,834	7,136,610

A-9 — Inward and Export Cargoes Sampled and Inspected, Crop Year 1967-68

	Montreal	Sorel	Three Rivers	Quebec	Halifax and Saint John	Baie Comeau	Port Cartier	Total
				— bushels —				
Eastern grain								
Inward	602,467	—	—	—	—	—	—	602,467
Export	1,515,401	—	—	—	46,879	—	—	1,562,280
Western grain								
Inward	23,939,658	—	232,552	108,589	—	—	—	24,280,799
Export	39,285,198	12,962,970	10,735,191	19,375,095	15,630,936	20,775,094	16,694,686	135,459,170
Total	65,342,724	12,962,970	10,967,743	19,483,684	15,677,815	20,775,094	16,694,686	161,904,716

A-10 — Grain Sampled but not Inspected, Crop Year 1967-68

	Montreal	Sorel, Three Rivers and Quebec	Baie Comeau	Port Cartier	Total
Eastern grain					
Carlots	136	—	—	—	136
Inward cargoes (bu.)	—	—	—	—	—
Outward cargoes (bu.)	—	—	—	—	—
Bin lots (bu.)	549,060	—	—	—	549,060
Western grain					
Carlots	4	—	—	—	4
Inward cargoes (bu.)	—	—	—	—	—
Outward cargoes (bu.)	—	—	—	—	—
Bin lots (bu.)	23,450	—	—	—	23,450
U.S.A. grain					
Carlots	134	—	—	—	134
Inward cargoes (bu.)	12,706,513	—	—	—	12,706,513
Outward cargoes (bu.)	1,632,445	13,208,782	13,078,067	7,059,078	34,978,372
Bin lots (bu.)	1,560,316	—	—	—	1,560,316
Totals — cars	274	—	—	—	274
— bushels	16,471,784	13,208,782	13,078,067	7,059,078	49,817,711

A-11 — Gross Quantities of Grain Inspected and Weighed at Terminal Elevators, Crop Year 1967-68

Point	Wheat	Oats	Barley	Rye	Flaxseed
R E C E I P T S					
			— bushels —		
Fort William-Port Arthur	197,538,001	34,736,148	44,822,251	3,539,508	7,418,725
Vancouver-New Westminster	129,877,549	240,624	29,640,865	3,417,369	5,314,876
Victoria	9,115,827	1,811	—	—	—
Prince Rupert	8,942,282	544	—	—	—
Churchill	21,806,591	—	—	—	—
Calgary	339,838	2,739	1,162,675	7,313	1,548
Edmonton	165,364	9,170	35,281	—	—
Lethbridge	17,796	—	—	—	2,120
Moose Jaw	214,900	—	—	—	—
Saskatoon	1,195,312	—	—	—	—
Total receipts	369,213,460	34,991,036	75,661,072	6,964,190	12,737,269
S H I P M E N T S					
			— bushels —		
Fort William-Port Arthur	174,966,131	34,015,196	47,331,062	3,367,700	8,980,548
Vancouver-New Westminster	127,414,944	1,095,431	29,329,333	3,116,289	5,208,157
Victoria	8,445,139	107,854	9,458	—	605
Prince Rupert	8,179,977	109,090	—	—	—
Churchill	21,542,585	334,000	—	—	—
Calgary	303,570	11,820	1,102,458	7,313	1,548
Edmonton	127,482	9,876	15,614	—	—
Lethbridge	63,302	946	—	—	2,120
Moose Jaw	48,395	1,935	—	—	—
Saskatoon	1,093,791	—	—	—	—
Total shipments	342,185,316	35,686,148	77,787,925	6,491,302	14,192,978

A-11 — Gross Quantities of Grain Inspected and Weighed at Terminal Elevators, Crop Year 1967-68 — Continued

Point	Corn	Buckwheat	Mustard seed	Rapeseed	Miscellaneous*
RECEIPTS					
	— bushels —				
Fort William-Port Arthur	—	106,298	150,233	791,570	3,348,258
Vancouver-New Westminster	—	441,135	734,636	14,506,765	1,864,976
Victoria	—	—	—	224	—
Prince Rupert	—	—	—	—	—
Churchill	—	—	—	—	—
Calgary	—	2,098	296,870	6,197	—
Edmonton	—	—	179,611	20,733	—
Lethbridge	—	—	92,746	—	—
Moose Jaw	—	—	—	—	—
Saskatoon	—	—	—	616	—
Total receipts	—	549,531	1,454,096	15,326,105	5,213,234
SHIPMENTS					
	— bushels —				
Fort William-Port Arthur	—	103,540	149,230	651,622	14,426,140
Vancouver-New Westminster	—	411,552	757,985	12,091,333	7,777,100
Victoria	—	—	—	451	294,700
Prince Rupert	—	—	—	—	297,355
Churchill	—	—	—	—	249,859
Calgary	—	2,098	329,829	6,197	46,255
Edmonton	—	—	244,225	18,129	28,885
Lethbridge	—	—	67,120	—	12,608
Moose Jaw	—	—	—	—	138,107
Saskatoon	—	—	—	621	124,091
Total shipments	—	517,190	1,548,389	12,768,353	23,395,100

* 50 pounds per bushel.

A-12 — Carlots Weighed, Leaking or with Defective Seals, in the Western Division, Crop Years 1966-67 and 1967-68

	Number		Percentage of total	
	1967-68	1966-67	1967-68	1966-67
Cars weighed in	275,924	410,902	100.0	100.0
Inward cars leaking	37,879	48,215	13.7	11.7
Inward cars with missing or defective seals	12,435	29,327	4.5	7.1
Cars weighed out	16,644	17,945	—	—

A-13 — Average Reported Outturn Shortages on Vessel Shipments of Grain from Fort William-Port Arthur to Licensed Eastern Elevators during the 1967-68 Crop Year

Grain	Bushels shipped	Shortage in pounds per 1,000 bushels	
		1967-68	1966-67
Wheat	144,970,277	39.92	45.62
Durum wheat	14,725,176	42.28	43.85
Oats	27,096,343	21.94	25.52
Barley	28,401,544	30.27	38.44
Rye	2,108,438	45.21	43.79
Flaxseed	4,344,619	34.84	45.98
Rapeseed	255,424	44.26	35.35
Screenings (in tons)	41,386	1.52 lbs. per ton	1.89 lbs. per ton

**A-14 — Tough and Damp Grain Dried at Terminal Elevators,
Crop Year 1967-68**

	Artificial Drying			Natural drying	Total
	Tough	Damp	Tough and damp		
Lakehead	— bushels —				
Wheat	76,679	253,955	330,634	3,045,484	3,376,118
Durum	3,673	558	4,231	93,434	97,665
Oats	10,771	27,066	37,837	92,551	130,388
Barley	65,393	192,147	257,540	1,272,423	1,529,963
Rye	7,500	1,189	8,689	72,550	81,239
Flaxseed	14,187	79,232	93,419	177,916	271,335
Mixed grain	—	411	411	374	785
Buckwheat	—	—	—	3,255	3,255
Rapeseed	220	1,959	2,179	2,379	4,558
Totals	178,423	556,517	734,940	4,760,366	5,495,306
Pacific Coast					
Wheat	1,910,200	283,668	2,193,868	3,053,473	5,247,341
Durum	—	—	—	—	—
Oats	—	—	—	213	213
Barley	6,516	144,046	150,562	861,278	1,011,840
Rye	—	—	—	59,836	59,836
Flaxseed	7,997	1,539	9,536	134,263	143,799
Mixed grain	—	—	—	168	168
Buckwheat	—	—	—	2,393	2,393
Rapeseed	—	12,847	12,847	31,510	44,357
Totals	1,924,713	442,100	2,366,813	4,143,134	6,509,947
Interiors					
Wheat	—	115,997	115,997	30,782	146,779
Durum	—	—	—	—	—
Barley	—	—	—	—	—
Flaxseed	—	23,245	23,245	—	23,245
Mixed grain	—	—	—	—	—
Rapeseed	—	9,381	9,381	—	9,381
Mustard seed	—	—	—	78	78
Totals	—	148,623	148,623	30,860	179,483
Churchill					
Wheat	—	—	—	54,992	54,992
Totals, all positions ..	2,103,136	1,147,240	3,250,376	8,989,352	12,239,728

A-15 — Quality Data for Grades of Hard Red Spring Wheat Marketed, Crop Year 1967-68

	1 Nor.	2 Nor.	3 Nor.	4 Nor.	No. 5	No. 6
Test weight, lb./bu., Avery	66.5	65.3	64.9	64.3	62.0	60.4
1,000 kernel weight, g.	29.9	30.7	30.7	30.9	29.6	28.4
Wheat protein content, % ¹	13.9	13.8	13.8	13.5	13.2	12.9
Flour protein content, % ²	13.0	12.9	12.9	12.3	12.0	11.7
Flour yield, %	75.2	75.9	75.5	74.8	73.3	72.2
Flour ash content, %	0.44	0.44	0.45	0.48	0.54	0.56
Flour diastatic activity, mg.	170	174	178	205	246	272
Baking absorption, %	61.0	61.0	60.0	59.0	58.0	57.0
Loaf volume, cc.	860	875	840	805	730	690

¹ 13.5% moisture basis.

² 14.0% moisture basis.

A-16 — Carlot Inspections Appealed, Crop Year 1967-68

Item	Carlots	Percentage
Left as graded	199	95.2
Grades raised	6	2.9
Grades lowered	4	1.9
Totals	209	100.0

A-17 — Prairie Farm Assistance Act Collections, Crop Year 1967-68

Province	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed	Total
	\$	\$	\$	\$	\$	\$	\$
Manitoba	713,454.70	62,632.18	85,877.93	12,603.94	73,668.21	12,975.56	961,212.52
Saskatchewan	5,860,341.71	65,512.42	257,533.28	36,539.65	63,906.39	95,714.79	6,379,548.24
*Alberta	2,070,150.86	46,829.25	460,791.77	13,127.65	48,563.08	125,962.96	2,765,425.57
Totals	8,643,947.27	174,973.85	804,202.98	62,271.24	186,137.68	234,653.31	10,106,186.33

*Includes Peace River area in B.C.

Penalties on late filing of returns

Total collections August 1, 1967 to July 31, 1968

10,106,186.33

**A-18 — Weighted Average Lake Freight Rates on Canadian Grain from
Fort William-Port Arthur, Season of Navigation 1968***

Port of Discharge	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed
— cents per bushel —						
Georgian Bay Ports, Goderich, Sarnia and Walkerville	4.549	4.745	4.929	5.5	—	—
Port Colborne	5.846	—	7.0	—	—	—
Toronto	6.292	6.25	7.269	6.75	7.25	—
Kingston	6.75	6.234	6.819	—	—	—
Prescott	7.045	5.676	6.779	7.0	—	—
Montreal	8.348	5.903	7.015	8.296	8.5	8.942
Sorel	8.388	—	—	8.5	—	—
Three Rivers	8.433	6.0	7.25	—	—	—
Quebec	8.545	5.719	6.827	8.0	8.411	8.5
Baie Comeau	8.473	—	—	—	8.117	—
Port Cartier	8.372	—	—	—	—	—
Halifax	15.033	11.243	14.0	—	—	—
Other Maritime ports	20.759	21.654	19.289	—	—	—
Buffalo	—	—	7.75	8.0	—	—
Chicago	—	—	—	9.0	—	—
Duluth-Superior	—	—	6.0	6.0	—	—
Manitowoc	—	—	7.845	—	—	—
Milwaukee	—	—	7.778	—	—	—

* Rates originally quoted in United States funds have been converted to Canadian currency at the prevailing rates of exchange.

APPENDIX B

Amendments to Canada Grain Regulations

Amendments made to the Canada Grain Regulations during 1968 were as follows:

- (1) Revision of Section 5, which deals with the posting of copies of relevant portions of the Regulations at licensed country elevators.
- (2) Revision of Sections 48 and 49, which deal with "Rejected" grades for grain, effective August 1, 1968.
- (3) Revision of Section 73, which deals with drying of grain at terminal elevators.
- (4) Revision of Schedule A, to establish increased fees for registration of warehouse receipts in the Western Division, effective August 1, 1968,
- (5) Revision of Schedule C, to establish increased maximum charge for preparing railway cars for loading grain at terminal elevators.
- (6) Minor revision of Sections 20, 22 and 60, and of Schedule E, to bring these into line with current grain inspection procedure.

Committee on Western Grain Standards as at December 31, 1968

F. F. Hamilton	Chief Commissioner	} Board of Grain Commissioners
A. V. Svoboda	Commissioner	
C. L. Shuttleworth	Commissioner	
M. M. Ainslie	Chief Grain Inspector	
Dr. G. N. Irvine	Chief Chemist	
J. L. A. Doray	Chairman, Grain Appeal Tribunal	
Dr. J. W. Morrison	Dominion Cerealist	
L. A. McCorquodale	representing the millers of wheat flour	
H. Anderson	} representing grain growers in Alberta	
R. J. Graham		
E. F. Seney		
K. Anderson		
G. South	} representing grain growers in Saskatchewan	
D. L. Yonge		
L. L. Gray		
N. W. Strelloff		
W. J. Parker	} representing grain growers in Manitoba	
P. A. McPhail		
Ray Mitchell		
G. Constable	representing grain growers in British Columbia	
L. Bell	representing Plant Products Division, Canada Department of Agriculture	

Committee on Eastern Grain Standards as at December 31, 1968

F. F. Hamilton	Chief Commissioner	} Board of Grain Commissioners
A. V. Svoboda	Commissioner	
C. L. Shuttleworth	Commissioner	
M. M. Ainslie	Chief Grain Inspector	
W. G. Thomson	representing Montreal Board of Trade	
C. F. Bowker	representing Toronto Board of Trade	
C. Gordon McAuley	representing exporters of grain	
F. H. Dunsford	} representing millers of wheat in the Eastern Division	
C. L. Rogers		
J. R. Heaney	} representing grain growers in Ontario	
C. W. Huffman		
G. C. Nichols	representing growers of corn	
A. Bowman	additional	

APPENDIX C

List of Publications

Title	Issued
<i>Canada Grain Regulations</i>	Annually
<i>Annual Report, Board of Grain Commissioners</i>	Annually
<i>Canadian Grain Position</i>	Weekly
<i>Exports of Canadian Grain</i>	Monthly
<i>Canadian Grain Exports</i>	Annually
<i>Marketings, Distribution and Visible Carry-over of Canadian Grain</i>	Annually
<i>Grain Elevators in Canada</i>	Annually
<i>Summary of Country Elevator Receipts at Individual Prairie Points</i>	Annually
<i>Grain Research Laboratory Annual Report</i>	Annually
<i>Canadian Wheat.</i> Crop Bulletin	Annually
<i>Canadian Barley.</i> Crop Bulletin	Annually
<i>Canadian Flax and Rapeseed.</i> Crop Bulletin	Annually
<i>Canadian Wheat Cargoes.</i> Bulletin	Quarterly
<i>Canadian Durum Cargoes.</i> Bulletin	Quarterly
<i>Map of Western Canada showing the protein content of hard red spring wheat</i>	Annually
<i>Official Canadian Grain Grading Guide</i>	Annually
<i>Identification of Barley and Wheat Varieties</i>	
<i>Handbook on the Sale and Handling of Grain Through a Country Elevator</i>	
<i>The Farmer and the Country Elevator</i>	

Further information on Board of Grain Commissioners Laboratory scientific and technical publications will be found in the Laboratory's 1968 Annual Report.

APPENDIX D

Revenue and Expenditure

Earned revenue and net expenditure of the Board, including the Canadian Government Elevators, for the fiscal year 1967-68 compared with 1966-67 were as follows:

	1967-68	1966-67
Revenue	\$6,665,576	\$7,512,257
Expenditure	9,706,577	7,807,070

Further information is given in the following tables.

D-1 — Earned Revenue and Net Expenditure, by Points and Division, Fiscal Year ended March 31, 1968

	Executive and Administra- tion	Inspection	Weighing	Statistics	Research Laboratory	Canadian Government Elevators	Total
REVENUE							
				— dollars —			
Winnipeg	1,924	46,734	26,175	75,195	12	2,075,628*	2,225,668
Churchill	—	101,394	51,683	10,612	—	—	163,689
Keewatin	—	2,427	1,380	—	—	—	3,807
Saskatoon	—	19,993	10,235	—	—	—	30,228
Moose Jaw	—	3,467	2,162	—	—	—	5,629
Medicine Hat	—	6,630	4,288	—	—	—	10,918
Lethbridge	—	10,699	236	—	—	—	10,935
Calgary	—	23,164	27,177	—	—	—	50,341
Edmonton	—	7,564	2,673	—	—	—	10,237
Vancouver	—	879,644	430,388	23,735	—	—	1,333,767
Victoria	—	42,818	20,986	—	—	—	63,804
Prince Rupert	—	36,925	18,407	—	—	—	55,332
Fort William	—	1,700,256	868,115	—	—	—	2,568,371
Toronto	—	6,757	—	—	—	—	6,757
Chatham	—	74,819	—	—	—	—	74,819
Montreal	—	24,059	—	16,465	—	—	40,524
Baie Comeau	—	2,928	7,822	—	—	—	10,750
Totals	1,924	2,990,278	1,471,727	126,007	12	2,075,628	6,665,576
EXPENDITURE							
				— dollars —			
Winnipeg	357,744	570,852	141,160	305,180	651,141	3,634,520**	5,660,597
Churchill	—	10,524	9,825	—	—	—	20,349
Keewatin	—	2,614	3,992	—	—	—	6,606
Saskatoon	23,090	57,806	39,192	—	—	—	120,088
Moose Jaw	—	15,139	15,200	—	—	—	30,339
Regina	22,714	—	—	—	—	—	22,714
Medicine Hat	—	19	17,692	—	—	—	17,711
Lethbridge	—	13,539	7,846	—	—	—	21,385
Calgary	—	92,887	70,938	—	—	—	163,825
Edmonton	25,153	97,618	22,552	—	—	—	145,323
Vancouver	—	458,059	336,445	87,990	—	—	882,494
Victoria	—	27,691	17,444	—	—	—	45,135
Prince Rupert	—	25,414	25,020	—	—	—	50,434
Fort William	—	1,097,292	890,784	103,824	—	—	2,091,900
Toronto	—	14,838	—	—	—	—	14,838
Chatham	—	73,138	—	—	—	—	73,138
Montreal	—	273,128	13,214	24,831	—	—	311,173
Baie Comeau	—	20,202	8,326	—	—	—	28,528
Totals	428,701	2,850,760	1,619,630	521,825	651,141	3,634,520	9,706,577

* Includes revenue for all Government Elevators.

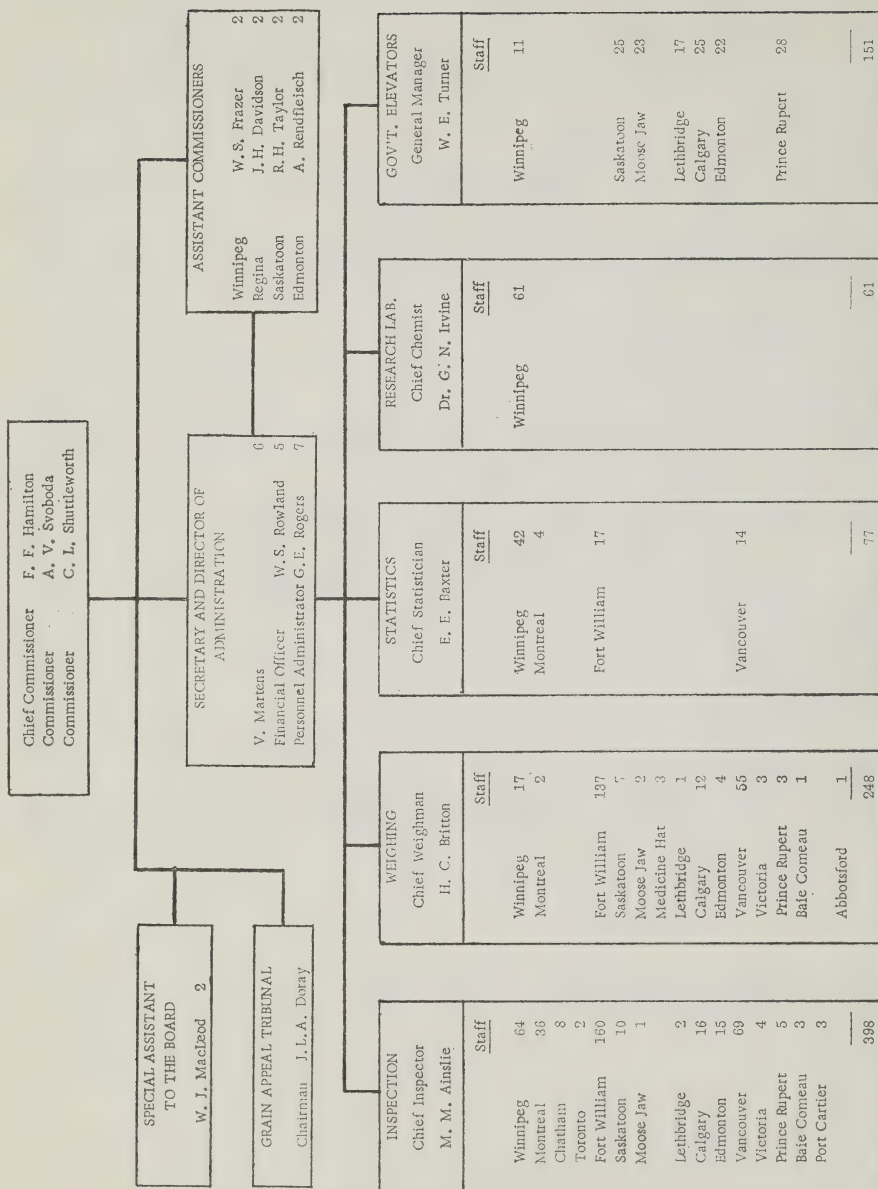
** Includes expenditure for all Government Elevators, and \$1,882,963 towards construction of annex to Prince Rupert Elevator.

D-2 — Summary of Operations by Divisions, Fiscal Year Ended March 31, 1968

	Executive and Administra- tion	Inspection	Weighing	Statistics	Research Laboratory	Canadian Government Elevators	Total
REVENUE							
	— dollars —						
Fees	—	2,953,301	1,465,696	126,007	—	—	4,545,004
Overtime	—	11,688	6,031	—	—	—	17,719
Express charges	—	3,228	—	—	—	—	3,228
Samples Sold	—	22,061	—	—	—	—	22,061
Refund of previous year's expenditures	—	—	—	—	—	—	—
Miscellaneous	1,924	—	—	—	12	—	1,936
Grain handling charges	—	—	—	—	—	2,075,628	2,075,628
Totals	\$1,924	\$2,990,278	\$1,471,727	\$126,007	\$12	\$2,075,628	\$6,665,576
EXPENDITURE							
	— dollars —						
Salaries	303,805	2,521,619	1,523,737	407,800	403,698	1,161,177	6,321,836
Rent	21,964	88,075	9,079	41,497	55,532	6,815	222,962
Travel	30,242	79,640	53,094	5,839	13,336	11,207	193,358
Purchase of equipment	18,192	48,775	463	—	96,753	13,628	177,811
Construction of Buildings ..	—	—	—	—	—	1,882,963	1,882,963
Repairs and upkeep of buildings and works	353	—	—	—	—	175,870	176,223
Grants in lieu of taxes	—	—	—	—	—	172,754	172,754
Power (electrical)	—	—	—	—	—	114,555	114,555
Screenings	—	—	—	—	—	41,097	41,097
General expense	50,844	93,633	24,027	18,798	68,071	50,601	305,974
Printing, stationery and office equipment	3,301	19,018	9,230	47,891	13,751	3,853	97,044
Totals	\$428,701	\$2,850,760	\$1,619,630	\$521,825	\$651,141	\$3,634,520	\$9,706,577

APPENDIX E

BOARD OF GRAIN COMMISSIONERS FOR CANADA



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Report of the

**BOARD OF
GRAIN COMMISSIONERS
FOR CANADA • 1970**

CANADA DEPARTMENT OF AGRICULTURE

Minister
Hon. H. A. Olson

Deputy Minister
S. B. Williams



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Information Canada
Ottawa, 1971
Cat. No. A91—1/1970

BOARD OF GRAIN COMMISSIONERS FOR CANADA

Winnipeg, Manitoba,
January 29, 1971.

The Honorable H. A. Olson, M.P.,
Minister of Agriculture,
OTTAWA, Canada.

Sir:

We are pleased to submit the 1970 Report of the Board of Grain Commissioners for Canada, in compliance with Section 23 of the Canada Grain Act.

The report contains a review of the Board's principal activities during the year, together with information and statistics relating to quality and volume of grain handled through the Canadian licensed elevator system during the 1969-70 crop year, and a review of the quality of 1970 grain crops.

Respectfully submitted,

F. Hamilton,
Chief Commissioner.

C. L. Shuttleworth,
Commissioner.

H. D. Pound,
Commissioner.

V. Martens,
Secretary.

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INTRODUCTION

The Board of Grain Commissioners is responsible for administering the Canada Grain Act and has general supervision over grain handling in Canada. It has the power to make regulations and orders that are consistent with the Act.

The Board's operations are divided into six main functions. The Executive Offices deal with general administrative matters, provide financial and personnel services, and include the offices of the Assistant Commissioners. The Inspection Division, which is the largest of the operational divisions, provides official inspection and grading of grain at various points across Canada, particularly grain received at and shipped from terminal elevators and grain loaded to vessels for export at eastern elevators. The Weighing Division is responsible for official weighing of grain at terminal and mill elevators, annual weighovers of grain stocks in terminal and eastern elevators, and inspection and certification of scales in terminal and eastern elevators. The Statistics Division collects, compiles and publishes basic statistics relating to handling and storage of grain within the licensed elevator system. Other responsibilities include issuing of licences to elevator operators and grain dealers, supervision of bonding of licencees, and registration of warehouse receipts issued by managers of terminal and eastern elevators. The Division is making increasing use of electronic data processing and telecommunication equipment in its work. The Research Laboratory carries on a program of research related to the quality of cereal grains and oil seeds, conducts quality surveys of current crops and shipments, and participates in testing of new varieties in collaboration with plant breeders and the Board's Inspection Division. The Canadian Government Elevators system, which is managed, operated and maintained by the Board, is comprised of six terminal grain elevators located in Western Canada. One of the elevators is situated at the port of Prince Rupert, B.C., and handles grain for loading directly to ocean vessels.

In addition, the Board constitutes Grain Appeal Tribunals and Committees on Western and Eastern Grain Standards. It also has responsibility for collecting the 1 per cent levy under the Prairie Farm Assistance Act and for setting maximum lake grain freight rates when considered advisable, under the provisions of the Inland Water Freight Rates Act.

SECTION 1—GRAIN PRODUCTION, QUALITY AND DISPOSITION

Grain Supplies and Disposition, 1969-70

The 1969-70 crop year was a period of improved grain handlings compared with the past two seasons and witnessed the attainment of several new records.

A record estimated 1,198 million bushels of wheat, oats, barley, rye, flaxseed and rapeseed were carried over into the 1969-70 crop year with approximately 51% of this total held in farm storage. The 1969 crop included 684.3 million bushels of wheat, 371.4 of oats, 378.4 of barley, 16.5 of rye, 27.5 of flaxseed and 33.4 millions of rapeseed. The combined inward carry-over and 1969 production provided an all time high total available supply of 2,710 million bushels of grain to meet our export commitments and domestic requirements, some 425 million bushels more than the comparable 1968-69 figure.

Producers' marketings of the six major grains and oilseeds, 670 million bushels, were above 1968-69, 1967-68 and the previous 10-year average deliveries.

Receipts of barley (169.4 millions) and rapeseed (28.5 millions) were record highs while marketings of oats (20.9 millions) were the lowest on record.

Export clearances of the six principal grains, oilseeds and by-products of 486 million bushels were some 120 millions above the previous year's movement. Barley export in bulk (82.7 millions) achieved their highest level in the past fifteen years. Flaxseed clearances (18.6 millions) have been exceeded only twice while the overseas flow of Canadian rapeseed (22.2 millions) reached a record high.

The 1969-70 commercial disappearance included 854 million bushels consumed in Canada for human food, feed, seed and industrial use plus a further 486 million bushels moved into export channels. This total disposition left a carry-over at July 31, 1970, of 1,370 million bushels, an all time high quantity. About 58% of the total was held in on-farm storage.

Grades and Quality of Grain Marketed in 1969-70

For most cereals and oil seeds, the grain marketed during 1969-70 consisted of some new crop material together with unknown amounts of grain from several previous harvests.

Hard Red Spring Wheat. The volume of spring wheat moving forward through country elevators to market positions during the 1969-70 crop year was somewhat smaller than in the previous year. Over 67% of the carlots of red spring wheat marketed in 1969-70 qualified for the top three grades — Nos. 1, 2 and 3 Northern. The propor-

tion of high-grade wheat remained somewhat low for the second consecutive year, continuing to reflect the movement of a considerable amount of 1968 crop grain which suffered badly from very poor harvest weather. Approximately 20% of terminal receipts were tough or damp, as compared with nearly 30% in the previous crop year.

Protein levels for the grades Nos. 1 and 2 Northern marketed in the 1969-70 crop year were slightly higher than those for the previous crop year but this was not reflected in the baking strength as loaf volumes were slightly lower this year. The No. 3 Northern grade this crop year was equal in baking strength to that for the previous year even though the protein content was a little lower. The protein content and baking strength of the No. 4 Northern grade was the same as for the previous crop year. Baking absorption levels were the same as last year for all grades except No. 1 Northern which was lower this year.

The protein content of wheat cargoes exported from Atlantic ports in the crop year was slightly higher than for Pacific coast shipments. The baking strength for all grades of Atlantic shipments was correspondingly higher. Relative to the Atlantic cargoes, shipments of No. 4 Northern from Churchill were higher in protein content and baking strength while No. 3 Northern shipments were slightly lower in both factors; the top two grades, No. 1 and No. 2 Northern, from both ports, were about equal in protein and baking performance.

Amber Durum Wheat. The proportion of durum wheat entering the top three grades in the 1969-70 crop year was significantly greater than in the previous crop year—over 62% of the carlots graded No. 1, 2 or 3 C.W. this year. A further 20% graded Extra No. 4 C.W., reflecting the high quality of 1969 production. All grades, except No. 5 C.W., were lower in thousand kernel weight this year. However, pigment content of the wheat, the semolina and the spaghetti was higher this year for all grades and the color of the spaghetti made from durum wheat of this year's movement was equal to or superior to the levels for the previous crop year.

Barley. In contrast to the previous year, the harvest weather in 1969 was generally good except in northern Alberta, and the barley crop was of good quality. However, less than 20% of the carlots of barley marketed during the crop year qualified for malting grades. The largest single grade in this year's movement was 1 Feed and this represented about 54% of the total. The quality of the higher grades, especially two-row grades, was good. There appears to be an increasing demand by the domestic and export malting trade for two-row barleys and there is a definite increase in production of this type. The new six-row variety Paragon was grown to some extent in Manitoba but Conquest was widely grown in all provinces.

Oats. Only 8,377 carlots of oats were inspected and this constituted the smallest movement of oats for several years. The quality was only fair because of mildew and stain, and just 14% of the carlots qualified for the milling grades, No. 3 C.W. or higher.

Rye. The 1969 crop was relatively free of serious damage and about average with respect to content of ergot. Rye moving to terminal positions was below average in quality due to blending of the old crop carry-over with new crop material. About 50% of the shipments qualified for grades No. 1 and No. 2 C.W.

Flaxseed. About 70% of the carlots of flaxseed marketed in the 1969-70 crop year qualified for the top grade, No. 1 Canada Western. A further appreciable proportion of the flax marketed, 21%, was basically of top grade but had excessively high moisture levels necessitating artificial drying. The oil content of the flax marketed this past crop year averaged 42.3%, a slight drop from the level over the previous four crop years. The protein content of the oil-free meal, 40.4%, was over one percentage unit higher this year.

Rapeseed. Like flaxseed, rapeseed is in essence a one grade crop. About 93% of the carlots of rapeseed marketed during the 1969-70 crop year were graded No. 1 Canada Rapeseed. Oil content of this rapeseed averaged 44.7%, fractionally lower than the level for the previous crop year. The protein content of the oil-free meal, 39.8%, was essentially unchanged from last year.

Domestic Mustard Seed. Although production of mustard seed was lower than in either of the two previous crop years, the quality of the 1969 crop was good, the main degrading factor being inseparable admixtures of weed seeds, including wild mustard seed. Over 40% of these shipments qualified for No. 1 C.W. grade in yellow, oriental and brown classes.

Domestic Buckwheat. The export movement of this grain was considerably greater than in any previous year and 535 carlots were inspected. Quality was about average for this crop in Western Canada with the bulk of carlots qualifying for No. 3 C.W. or higher grades.

Peas. The 1969 crop was considerably larger than the previous year's harvest and was also of better general quality. There was less field and weather damage, but shipments contained somewhat more immature and under-sized peas.

Canada Eastern Grains. Only about 37% of the white winter wheat crop qualified for grades No. 1 or No. 2 Canada Eastern. The balance was mainly degraded on account of sprouting as a result of wet harvest conditions and for this reason over 25% of carlots inspected were graded sample on account of excessive sprout damage. The downward trend in barley inspections continued with only 188 carlots graded, of which 175 qualified for malting grades. A total of 2,213 carlots of corn were inspected and 88% of these were either straight grade or extra dry, and 85% qualified for No. 3 Canada Eastern or higher grades. Only 1,068 carlots of soybeans were inspected in the crop year. Quality was about average and just under 70% graded as No. 1 or No. 2 Canada Yellow. The bulk of this crop was harvested

in wet condition in 1969 and 30% of carlots inspected were either tough or damp. Pea beans marketed were above average quality with good colour, the only serious degrading factors being splits and clay pellets. Trial export shipments of containerized beans were made and indications are that this method of merchandising special crops may be common practice in the future.

Growing Conditions, Grades and Quality, 1970 Crop

Moisture reserves on the Canadian prairies in the spring of 1970 were for the most part quite adequate. Post-harvest rains in 1969 had been widespread, and although the winter's snowfall had been only normal or below, the early spring was cool, resulting in a slow melt of the snow and a very good absorption of the resultant water.

Several heavy snows blanketed large areas of the prairies late in April and early in May and hindered work on the land. Seeding commenced during the last week in April in some of the southern areas of Alberta and became general in Alberta and western Saskatchewan by the third week in May. On the other hand, widespread rains and cool weather prevented much work on the land in eastern Saskatchewan and Manitoba until well into June. Hot dry weather across the prairies in the second week of June enabled farmers to make significant progress with their seeding, but it also produced a near drought situation in the early seeded areas of the western prairies. This situation was, however, alleviated by general rains later in the month and crop development, although later than normal, was considered good to excellent in most areas by midsummer. Almost all areas received adequate moisture throughout July. A prolonged hot spell which began in the first part of August forced development faster than had been expected and some crops which were rather shallow rooted suffered somewhat from burning.

The harvest began about mid-August in some of the southern areas where early seeding had been possible. Harvesting became general early in September but was occasionally interrupted by rain. Near mid-September snow fell on rather large areas of Alberta and Saskatchewan. Despite these periodic unfavorable conditions, most of the crop was harvested in a dry condition.

Red Spring Wheat. The 1970 hard red spring wheat crop estimated at 231 million bushels, is the smallest since 1937, and in view of the substantial carry-over (more than three times this amount) the impact of the new crop on export shipments will be minimal. The 1970 crop is for the most part high in grade. It is expected that about 80% of the new crop will enter the top three grades. The distribution among the various grades is estimated to be: No. 1 Manitoba Northern, 27%; No. 2 Northern, 30%; No. 3 Northern, 23%; and No. 4 Northern and lower grades, 20%. The average protein content of this crop is 13.2%, down 0.4% from the mean value of 13.6% for the 20-year period 1950-1969.

In comparison with the quality of cargo shipments exported from

Canada during the fourth quarter (May, June, July) of the 1969-70 crop year, the test weight of the new-crop wheat is down by about one pound for each of the eastern prairie grades. Flour yields are essentially unchanged, but flour color is very significantly better for all grades of the new crop in both eastern and western prairies. Alpha amylase levels are relatively low, indicative of minimal weathering or sprout damage.

Baking quality, as indicated by loaf volume, is down slightly in the eastern prairie wheat and quite markedly in the western prairie wheat. This latter is partly due to lower protein but the major cause is 'greenness' which appears to be characteristic of the 1970 crop and which will improve with storage of the new crop.

Amber Durum Wheat. The 1970 crop of amber durum wheat is about 80 million bushels, just below the record crop of last year. Test weight per bushel is higher in all grades by about one pound, and semolina yields are generally better as a result. Macaroni color is consistently better than for current export shipments, especially for the grade Extra No. 4 C.W.A.D. Protein content in the 1970 crop is slightly higher in the No. 1 and 2 C.W.A.D. grades but is lower in No. 3 C.W., Extra No. 4 C.W., and No. 4 C.W.A.D. grades. With a carry-over of about the same size as the new crop, little change from present quality levels is expected.

Barley. The 1970 barley crop of 391 million bushels is the largest on record. Most of the crop was harvested in good weather and it is of good quality. The malting quality of six-row and two-row grades is good. There is considerable demand from overseas for the first time for two-row barley for malting. Owing to a worldwide shortage of feed grains, there is considerable pressure on supplies of Canadian barley.

Flaxseed. The new flaxseed crop of over 48 million bushels is the largest on record and almost all of it will enter the No. 1 C.W. grade. For this grade, oil content is very slightly below last year's new crop estimate, iodine value is about the same, but protein content of the meal is slightly higher. The 2 C.W. grade is 1% higher in oil content, and slightly lower in protein; 3 C.W. grade is the lowest in oil content and highest in protein.

Rapeseed. The 1970 rapeseed crop of about 71 million bushels is also the largest on record. Most of it will enter the No. 1 grade. Compared with estimates of new crop quality of the previous crop, the new crop is slightly higher in oil content, but the protein content of the oil-free meal is slightly lower. The change from the previous year, however, will be negligible in terms of average quality.

Eastern Winter Wheat. White winter wheat production in Ontario in 1970 was estimated to be 15.6 million bushels. The protein content of the 1970 crop was estimated by the Board's Research Laboratory to be 9.9% as compared with 9.6% for the 1969 crop. The predominant grade in the 1970 crop survey was No. 2 Canada Eastern White Winter Wheat and represented over 80% of the samples.

Meetings of Committees on Grain Standards

The personnel of the Committees on Western and Eastern Grain Standards as constituted by the Board under Section 25 of the Canada Grain Act, are listed in Appendix B.

The Committee on Western Grain Standards met in Winnipeg on October 29, 1970. The Committee received the Chief Grain Inspector's reports on crop conditions, and usual factors affecting the quality and grades of crops produced in 1970. The Inspection Division collected 956 two-bushel bags of grain representing grain produced in Western Canada and from these prepared 51 tentative standard and standard export grade samples which were presented to the Committee. The Committee established 34 of these as standard samples of statutory grades, 10 as standard export samples for grades of red spring and amber durum wheat, and 7 as standard samples of commercial grades of grain. The Board's Chief Chemist reported to the Committee the details of quality tests on the tentative 1970 standard export samples of red spring and amber durum wheat, and in addition, the detailed results of laboratory tests on tentative 1970 standard samples of red spring, amber durum wheat, barley, rapeseed and flaxseed. Dr. J. W. Morrison of the Research Branch, C.D.A., Ottawa, gave the Committee a brief report on some aspects of cereal research in that Branch and a special report on ergot, a fungus disease of cereals.

The Committee on Eastern Grain Standards met in London, Ontario, August 27, 1970, and established 18 samples of wheat, oats, barley, and rye as standard samples of statutory grades of the early harvest crops. At its second meeting in Montreal on November 5, 1970, the Committee established 17 standard samples for statutory grades of corn, soybeans, beans, buckwheat and flaxseed.

Variety Testing

The Inspection Division continued its co-operative service to Canadian plant breeders by examining and reporting on over 2,300 samples of wheat and barley submitted. In addition, the Canada Committee on Plant Breeding of the National Research Council was provided with detailed descriptions of kernel characteristics for 102 varieties of wheat and barley grown in the 1970 co-operative variety tests.

There was an appreciable increase in the amount of varietal identification and analyses work provided on a co-operative basis for other divisions of the Department and as a service to producers, their organizations and the grain trade.

Each year the Canada Committee on Grain Quality evaluates the potential acceptability of new varieties of cereal grains grown in the Co-operative Test. The Board's Research Laboratory conducted detailed quality tests on the new test varieties of hard red spring wheat, amber durum wheat, and malting barley grown in 1969. Included in this test were 19 varieties of hard red spring wheat, 16 varieties of durum wheat and 45 varieties of barley.

The hard red spring wheat varieties were mostly in the early stages of testing. A new variety of durum wheat was licensed in 1969 under the name Hercules. It is superior to the standard variety, Min-dum, and its major attributes are superior gluten characteristics and macaroni color.

Of the 45 new barley varieties tested, four were subjected to extensive pilot malting and brewing tests. An additional year of testing is required for these varieties, two of which are two-row varieties produced in Canada.

As in past years, the Laboratory again collaborated in the annual testing program of wheat quality sponsored by the Crop Quality Council of the United States. The series of tests carried out on wheats grown in 1969 included a total of 57 samples representing 3 conventional spring wheat varieties and 13 semi-dwarf wheat varieties. The baking quality of these wheats was examined by cereal technologists from 18 different organizations. This collaboration in the American testing program provides a valuable mechanism for keeping abreast of new developments in the United States.

SECTION 2—DOCUMENTATION AND ELEVATOR OPERATIONS

Grain Documentation

Statistics. The Board required from all licensees certain records and periodical reports of stocks and handlings which were considered necessary for effective supervision and control. From returns submitted, the Statistics Division compiled and published basic statistics relating to the storage and movement of grain within the Canadian elevator system. Documents and reports were also received by the Statistics Division from other Board Divisions, the Canadian Wheat Board and other organizations associated with the grain trade.

As the principal source of Canadian grain storage and handling statistics, the Division worked closely with the Canadian Wheat Board, the Agricultural Division of the Dominion Bureau of Statistics, other federal and provincial government offices, and internationally with the Commonwealth Economic Committee, the Food and Agriculture Organization of the United Nations, the International Wheat Council, and the Production and Marketing Branch of the United States Department of Agriculture.

A number of tables pertaining to the 1969-70 crop year are given in Appendix A and a list of the principal statistical releases is included in Appendix C.

Licensing and Bonding. The number of licences issued by the Board for country, terminal, mill and eastern elevators totaled 5,060 at August 1, 1970, compared with 5,074 at August 1 of the previous year. Total licensed storage capacity increased only fractionally to a total of 700,013,260 bushels from 699,962,260 bushels a year ago. An increase of 2.5 million bushels in the country elevator storage system was offset by a decrease of similar proportion in the semi-public terminal sector. During the crop year 1969-70, the Board received 125 applications for transfer of country elevator licences as these elevators changed ownership between companies. A summary of licences in force and licensed storage capacity is contained in Table A-2. -

Guarantee bonds in the amount of \$33,591,985, executed by 16 surety companies, were deposited with the Board as security during the crop year 1969-70. In addition, a negotiable government bond in the amount of \$1,000, was deposited by one licensee in lieu of the usual form of surety bond.

The Statistics Division scrutinized the insurance coverage required to be maintained by semi-public terminal, eastern elevator and public country elevator licensees on grain stocks in their licensed premises.

Registration. Operators of managers of semi-public terminal and eastern elevators are required to issue warehouse receipts or transfer receipts for all grain taken into store. Such warehouse receipts and

transfer receipts must be registered with the Board as to grade and quantity at the time of issue, and surrendered to the Board to be registered for cancellation when the grain they represent has been shipped out. Upon registration by the Board the warehouse receipts become negotiable documents and are used as collateral by the various grain companies in financing the movement of the grain. Registration services were provided to the elevator operators at the headquarters office of the Statistics Division in Winnipeg and at sub offices in Vancouver and Montreal.

New Procedures. Information systems to facilitate the introduction of protein as a factor in the grain grading system are being developed by the Statistics Division in co-operation with the other divisions of the Board. These systems were subjected to initial testing under the protein segregation pilot project carried out at two Thunder Bay terminal elevators in the latter part of 1970.

The decision to proceed with the integration of magnetic tape units into the Division's computerized records, maintenance and data communication operations represented a further step in the upgrading of service in these two areas.

The Division participated extensively in the development of new forms and procedures related to the implementation of the new Canada Grain Act and Regulations.

Country Elevators

Inspection of Elevators. The Board's four Assistant Commissioners located at Winnipeg, Saskatoon, Regina and Edmonton, kept the Board in close touch with the operations of licensed country elevators in the Prairie Provinces.

During the year 1970, the Assistant Commissioners inspected 595 elevators in Manitoba, 772 in northern Saskatchewan, 719 in southern Saskatchewan and 754 in Alberta, a total of 2,840. This inspection included checks on scales, sieves, moisture meters and certain other equipment; deductions for shrinkage and Prairie Farm Assistance Act Levy, and posting of current Board regulations applying to country elevators.

In addition to this regular program of inspections, the Assistant Commissioners assisted in the investigation of producers' complaints and of reported infractions of the Board's regulations and orders. They also received and handled numerous inquiries from producers and elevator operators on various matters relating to country elevator operations.

Weigh-overs. The results of the 1969-70 country elevator weigh-over program conducted by licensed grain companies have been summarized in the following table. The relative patterns of overage and shortage percentages indicate only minor fluctuations in comparison with the previous year.

The Board reviewed the details of the weigh-overs and other related records and, when necessary, held discussions with company management. The Assistant Commissioners were given authority to deal directly with elevator agents and superintendents where excessive overages or shortages had been reported.

Elevators reporting	1969-70	1968-69
Shortages	431	432
Neither overages nor shortages	32	12
Overages of less than .25%	432	432
Overages of .25% to .50%	254	247
Overages over .50%	172	163
Total number of elevators weighed over	1,321	1,286

Tariff of Charges. During the crop year 1969-70 the maximum elevation charge for handling of wheat at country elevators was 3¾ cents per bushel.

Terminal, Mill and Eastern Elevators

Services. All grain received at and shipped from licensed terminal elevators in the Western Division was sampled and graded by staff of the Inspection Division, and weighed under supervision of the Board's weighing staff. Inspection and weighing services were also provided at licensed mill elevators in the Western Division.

At licensed eastern elevators located at St. Lawrence River and Maritime ports grain loaded into vessels for export was sampled, inspected and certified. Other sampling, inspection and weighing services in the Eastern Division were provided only on request. The inspection unit at Chatham, Ont., sampled and graded a considerable volume of eastern-grown grain for the grain trade in that area.

Information as to quantity of grain inspected and weighed during the 1969-70 crop year is given in Appendix A.

Terminal Elevator Grain Drying. The extensive grain drying program which was necessitated by the wet harvest season in 1968 continued through the 1969-70 crop year. During that period, over 72 million bushels of high moisture grain were artificially dried at terminal elevators under supervision of the Board's Inspection Division.

Weigh-overs. Whenever possible, official weigh-overs are conducted annually at licensed terminal and eastern elevators by groups of employees of the Weighing and Inspection Divisions. While a weigh-over is in progress, all normal elevator operations cease, and the grain-handling equipment and stocks of grain remain under the full control

of the weigh-over crew. The contents of every storage bin are weighed, sampled for verification of grade and recorded. This work may take from a few days to several weeks, depending on the size of the elevator and the quantity and type of grain in store. The Statistics Division compiles totals of outstanding warehouse receipts and handlings by grain and grade, obtains statements of stocks on hand from the Weighing Division and summarizes the results of each weigh-over for review by the Board. The purpose of these audits is to enable the Board to determine whether the grain-handling operations at the elevator have resulted in any excessive overage or shortage in the various kinds and grades of grain.

During the 1969-70 crop year, 19 terminal and 10 eastern elevators were weighed over. Deferments into the following crop year were made at 10 terminal elevators at the Lakehead, 8 terminal elevators at other points and at 18 eastern elevators. The Board found it necessary to grant these deferments to avoid delaying the handling and loading of grain required to meet export orders. However, it was possible to carry out 11 of these deferred weigh-overs before the end of December, 1970.

Inspection of Equipment. All automatic samplers, scales and equipment for transferring grain to scales on receipt, and from scales for shipment in all licensed terminal elevators and serviced mill and eastern elevators were inspected periodically. In accordance with the special arrangement with the Standards Branch of the Department of Consumer and Corporate Affairs, all scales in licensed terminal and eastern elevators were inspected, verified and certified by the Board's scale inspectors acting as inspectors under the Weights and Measures Act. Special inspections were made when any doubt arose as to the accuracy of a scale.

Plans and specifications for new elevator facilities and alterations to elevators and grain-handling equipment were examined before permission was given for commencement of work by elevator managers. When completed, new facilities and installations were inspected by officials of the Inspection and Weighing Divisions to ensure that no condition existed which might affect the efficiency of sampling or the accuracy of the weighing of grain received and shipped.

New Equipment. The Inspection Division, in co-operation with elevator management, arranged for further installations of pneumatic sample transport systems in terminal elevators. This is part of a continuing program to install such equipment where it will increase efficiency in the inspection service provided at the elevators.

Manually operated scales in several elevators at the Pacific Coast and in the Eastern Division were modified by the elevator managers to allow automatic control and operation. This new scale equipment was subjected to very thorough tests by the scale technician on the staff of the Weighing Division.

Tariffs of Charges. During 1970, the maximum elevation charge for handling of wheat, oats and barley at licensed terminal elevators

at Thunder Bay, The Pacific Coast and Churchill was 4⅜ cents per bushel. The revised maximum tariff of charges for licensed eastern elevators which went into effect on April 1, 1969, remained in force throughout 1970.

Safety Program. Working and safety conditions for Board employees located at grain elevators at terminal points were under constant review during the year and regular inspections were carried out at elevators in the Lakehead, Pacific Coast and eastern areas. Recommendations for improvements in lighting, dust control, signal systems and other facilities were sent to elevator managers as part of a program to have conditions brought up to an acceptable and uniform standard. Most firms operating terminal and eastern elevators co-operated with the Board by carrying out requested improvements to work areas where Board employees provide grain inspection and weighing services.

The Board issued instructions making it mandatory for all Board employees working in or near grain elevators to wear safety helmets.

Local safety committees at Thunder Bay and at Pacific Coast maintained a continuing program of work safety instruction and enforcement, and liaison with elevator superintendents. Board officials maintained liaison with officials of the Canada Department of Agriculture and the Canada Department of Labour in connection with various aspects of the safety program at grain elevators.

Canadian Government Elevators

The Board manages and operates six terminal elevators which comprise the Canadian Government Elevators system. Five of the elevators are located in the Prairie Provinces and one at the Pacific seaboard.

Handlings. During the 1969-70 crop year, receipts totaled 14.6 million bushels, a sharp drop from the 24 million bushels received in the previous year. Wheat was the principal grain handled—12 million bushels. The Calgary elevator handled 1.25 million bushels of barley for domestic use. The elevators at Saskatoon, Calgary and Edmonton handled over a half million bushels of mustard seed. Receipts and shipments at the various elevators were as follows:

Elevator	Capacity	Stocks August 1, 1969	Receipts	Shipments	Stocks July 31, 1970
— thousands of bushels —					
Moose Jaw	5,500	4,482	637	398	4,721
Saskatoon	5,500	4,584	1,351	866	5,069
Calgary	2,500	1,883	1,717	1,730	1,870
Edmonton	2,350	743	1,391	950	1,184
Lethbridge	1,250	890	142	162	870
Prince Rupert	2,250	1,363	9,400	9,371	1,392
Totals	19,350	13,945	14,638	13,477	15,106

Charges. During the crop year 1969-70, charges were the maximum permitted by the Canada Grain Regulations with the following exceptions: Storage charges after the first five days on wheat, oats and barley at the interior elevators were 1/45¢ per bushel per day instead of 1/30¢; cleaning charges on mustard seed were 4½¢ per bushel instead of 5½¢. Commencing August 1, 1970, the latter charge was increased to the maximum of 5½¢.

New Equipment. At Saskatoon a system for reclaiming grain from screenings was designed by the staff and the necessary cleaning machinery was purchased and installed. At the Edmonton elevator, additional new cylinder type cleaning machines were installed to improve the efficiency and rate of cleaning. At Prince Rupert, installation of a second set of large capacity cleaning machines was completed. A survey was carried out by engineers as a preliminary step to the replacement of motors and drives at the Prince Rupert Elevator.

Complaints and Inquiries

Producers' Complaints. During 1970, the Board and the Assistant Commissioners investigated nine written complaints about producer transactions with operators of licensed country elevators. In most cases, it was possible to arrange satisfactory settlements between the parties concerned.

In addition, the Assistant Commissioners dealt with a variety of informal complaints and, when necessary, interviewed elevator agents and local superintendents to advise on correct procedure.

Cargo Shortage Complaints. The Board received a total of seven complaints about excessive shortages reported on vessel shipments unloaded at Eastern Canadian ports. Most of these shipments originated at Thunder Bay and the Chief Weighmaster arranged with senior members of his staff to investigate the weighing and loading of the grain at the terminal elevators concerned. In regard to the unloading of the shipments at licensed eastern elevators, an official of the Weighing Division examined records and interviewed elevator personnel. The Chief Weighmaster reported his findings to the Board for review and forwarding to the complainants. In one case, an adjustment was arranged in favor of the shipper of the grain but in the remaining six cases no cause could be found for the reported discrepancies in weights.

In addition, nine complaints were received about outturn weights reported from overseas destinations. Investigations were conducted into the weighing of the shipments at the loading elevators in Canada and reports were forwarded to the complainants. The Board also reviewed information supplied by the complainants on unload procedures and equipment at the overseas ports.

Overseas Quality Complaints. A total of 14 complaints were received about various aspects of the quality of grain shipped to overseas

destinations. Thorough investigations were carried out by the Inspection Division or the Research Laboratory, depending on the nature of the complaint. Official samples taken from the shipments at the time of loading were studied and subjected to special tests. Where possible, these samples were compared with samples taken by the importers at the time of unloading overseas. Detailed reports of the Board's investigations were sent to complainants for their information.

Prosecutions. During 1970, at the request of the Board, the R.C.M.P. filed charges in court in connection with the alleged storage of grain outside of licensed premises in violation of Section 77 of the Canada Grain Regulations. The elevator operator concerned was found guilty of this offence and fined by the court.

SECTION 3—RESEARCH, INFORMATION AND OTHER SERVICES

Research

Laboratory Research. The Research Laboratory maintains a continuing program of basic and applied research related to the end-use quality of hard red spring wheat, durum wheat, and malting barley.

The peptide, L-cysteinylglycine, was isolated and identified in wheat germ. This component is of some practical interest as it has been shown to be involved in the so-called improver reaction which modifies dough properties and improves bread characteristics.

Studies using the fumigant phosphine with radioactive phosphorus atoms showed that approximately 40% of this fumigant reacts with wheat.

Changes in the physical properties of gluten upon incubation with various proteolytic enzymes have been examined by physical dough testing apparatus. Increasing concentrations of proteolytic enzymes caused an increase in the rate of stretching and a decrease in consistency as measured by the stretching test and farinograph respectively, and a reduction in bubble size in the alveograph test.

A technique has been developed using gel electrophoresis to detect the multiple forms of amylase enzymes in wheat. Changes in these forms during growth, maturation and germination of wheat are under study.

A field experiment was carried out in collaboration with the University of Manitoba Department of Plant Science using six wheat varieties to study the inter relationships between alpha-amylase activity and susceptibility to germination during maturation. Alpha-amylase activity in the fresh wheat increased to a maximum around 6 to 14 days after anthesis, but fell to a low level with desiccation of the kernels, either naturally in the heads during ripening, or on air-drying of the hand-separated immature kernels. Despite the almost complete absence of rain during the last month of ripening, significant numbers of pre-germinated kernels were found in some varieties and alpha-amylase activity increased accordingly.

The study initiated previously to investigate the relation (within grades, between provinces, and between seasons) between protein content and various properties of flour milled from Western Canadian hard red spring wheat was expanded to include a third season's samples. Work was also begun, using samples collected previously, on a survey of milling and baking properties of wheat varieties typical of various countries.

Research has been carried out on the automation of the enzymatic damaged starch test, together with the development of a rapid colorimetric method for the measurement of the protein content of large numbers of samples of wheat and other grains. The introduction

of certain refinements of apparatus and technique led to an overall improvement in efficiency of the Kjeldahl Protein Testing Laboratory.

Preliminary studies have been completed on the development of a colorimetric test for wheat and flour penctsans.

In response to recent public interest, a method has been developed for the quantitative analysis for mercury that is present in cereal grains. The method can detect mercury in the parts per billion range. Initial experimental results indicate that in comparison with published values of worldwide samples, Canadian levels of environmental mercury are among the lowest and represent in the main the 'natural' or environmental levels rather than contamination.

Both the laboratory-scale dough mixing unit developed in the baking laboratory and the GRL pin mixer were used to study some of the parameters of mechanical dough development related to the Chorleywood Bread Process. In order to achieve proper development of a dough, two basic requirements must be satisfied: (a) mixing intensity (impeller speed) must exceed a minimum critical level that varies with both mixer and flour; and (b) the work imparted to the dough must be greater than a minimum amount dependent on the flour used. Failure to comply with either of these two requirements results in suboptimum dough handling and bread properties.

In contrast to conventional mixing practice where the mixer speed is constant, the implication of varying mixer speed to maintain a constant rate of work to the dough during mixing was investigated. By fully utilizing the motor and mixer capacity in this way throughout mixing, a significant saving in mixing time can be achieved. The actual extent of this saving is dependent both on the type of mixer and the flour used.

Studies related to gas production and gas retention during various stages of breadmaking using the Brabender naturograph and oven-rise recorder were completed during the year. Technical Services studies on breadmaking methods and formulas used in various parts of the world again included a diversity of topics related to determining optimum conditions for utilizing Canadian hard red spring wheat flour in different marketing areas.

The experimental flour and semolina mill designed and constructed in the Laboratory has been completed, and comparisons have been made with the Allis-Chalmers mill used in the routine milling section. The experimental mill now has four individual stands of 6-in. diameter rolls each with independent feed mechanisms and variable speed roll drives. The power consumed during grinding can be measured and recorded separately for each stand of rolls in order to give additional information on the milling quality of different wheats.

In the service milling section the roll stands of the durum wheat mill are presently being rebuilt and equipped with vibratory feeds.

Studies on amber durum wheat on the effect of protein quantity on spaghetti quality showed that for the principal varieties grown in Western Canada (Stewart 63 and Ramsey) a minimum level of about

10.5% protein in the semolina is necessary for satisfactory cooking quality. Sprouted wheat, if present in excess of 8%, impairs the cooking quality of spaghetti.

A laboratory-scale continuous process press equipped with a vacuum system, recently acquired, has been modified and adjusted to produce spaghetti comparable to that produced commercially. This will permit a more comprehensive evaluation of durum wheat quality.

In barley research the development of enzymes during maturation of the grain and during malting continues to be the main interest and studies were expanded this year to include comparison of varieties. After flowering followed by a rapid disappearance of activity during Seven varieties showed development of alpha-amylase activity shortly filling of the kernel. A rainy period occurred just after the early maturing varieties were cut and before they were threshed. This caused incipient sprouting accompanied by a sudden burst of alpha-amylase activity in the grains of the malting varieties. The pattern of beta-amylase development was generally similar for all varieties although the relative levels of free and bound components differed among varieties. Four varieties were compared for beta-amylase development during steeping. Initial periods of wet steep were varied, and these were followed by alternating dry and wet steep periods. The initial wet steep periods had immediate effects on beta-amylase activity and on the transitions from insoluble to soluble forms. Extended initial steep periods depressed enzymatic activity to different degrees in different varieties but activity was recovered later in the dry steep period. An additional short wet steep period on the third day decreased activity in some varieties and increased it in others. All varieties increased in free activity in the final dry steep period but there were variations among varieties in insoluble beta-amylase amounts.

In other studies on malt the separation of alpha-amylase from beta-amylase and recovery of each in active form was accomplished by column and batch chromatography. Methods of identification and quantitative measurements of sugars in polysaccharides of barley and malt by controlled hydrolysis and automated analysis have been developed.

Statistical and Economic Studies. Research economists of the Board continued their analytic studies in the economic impact of handling and storage tariffs, and the grading and weighing of grain. To keep the Board informed of the adequacy of present levels of handling and storage tariffs, economists of the Statistics Division continued their detailed study regarding country and terminal costs. The program to provide current information and analysis on protein variability of export wheat cargoes from the port of Vancouver was continued on an expanded basis.

The Director of the Division continued to represent the Board in the Grain Transportation Technical Study Group. This body includes all elements of the grain handling industry — government agencies, elevator companies and major railways—joined together in a common research effort to co-ordinate and plan Canada's western grain trans-

portation system. The Director also chaired two subcommittees of the Technical Group, one dealing with all aspects of documents, records, reports and data communication within the western grain trade, and the other concerned with reducing the variability in the level of protein in wheat clearances from the Pacific Coast.

Revision of the Canada Grain Act. After detailed review by the House of Commons Standing Committee on Agriculture, Parliament, on December 18, 1970, passed a bill making provision for a new Canada Grain Act to be brought into force when proclaimed by the Governor in Council. The new statute will allow greater flexibility in the grain industry, particularly in the establishment of grain grades and grade specifications. It will also enable the introduction of protein as a quality factor in wheat.

Information Program

Publications. Statistics on the movement and storage of grain within the licensed elevator system were published and distributed regularly through a series of bulletins issued by the Statistics Division.

The Research Laboratory publishes a separate annual report providing a comprehensive summary of its activities. However, brief reference to some of the highlights of Laboratory activities is made at appropriate points throughout this report.

Results of Laboratory research projects, totalling 14 papers in all, were published in scientific and technical journals.

The Board's publications are listed in Appendix C.

Meetings. Members of the Board and senior officials accepted a number of invitations to address annual meetings of producer organizations and to discuss topics of current interest relating to the Board's work. In addition, they attended meetings held by several agricultural and other organizations including the Canada Grains Council, National Farm and Business Forum, Hudson Bay Route Association, and university faculties of agriculture.

Members of the Laboratory's professional and senior technical staff attended a total of 17 scientific and technical conferences. A complete listing is included in the Laboratory's Annual Report.

The Board convened regular meetings of the Committees on Western and Eastern Grain Standards.

Public meetings were held at Winnipeg on October 1, 1970, and at Montreal on November 4, 1970, to receive submissions from interested parties in connection with maximum tariffs of charges for country, terminal and eastern elevators.

Overseas Visits. A total of three missions composed of senior officials and technical experts of the Board, visited Brazil, China and Japan. The missions visited principal ports, grain handling facilities,

research institutes, flour mills and bakeries, and held discussions with government and technical personnel. The purpose of the visits was to provide information about the quality of Canadian wheat and other grains, discuss overseas flour milling requirements and techniques, and assist in promoting the sale of Canadian grain to overseas markets. Members of the Research Laboratory staff visited research institutes in several European countries and Great Britain.

Tour of Board Facilities. Many individuals and groups visited the Board and toured its inspection and laboratory facilities, to discuss matters related to the grain trade and to obtain first hand information about the functions and services of the Board. These visitors included missions sponsored by the Canadian Wheat Board and other organizations from Australia, Brazil, France, Japan, Norway, Pakistan and Poland.

Special arrangements were made to provide tours and lecture sessions for groups of country elevator agents, university students in agriculture and Assistant Trade Commissioners-in-Training from the Department of Industry, Trade and Commerce.

Films. The Board's films, 'Canadian Wheat' and 'Grain Handling in Canada' were shown to many interested individuals and groups.

Mobile Exhibit. The exhibit was placed on display at 12 agricultural fairs and at two other agricultural exhibitions in Manitoba, Saskatchewan and Alberta, and was visited by over 7,000 persons, principally grain producers and country elevator agents. Members of the Board's Inspection Division staff were in attendance to give information and advice to interested parties about the Board's functions and services, and the various varieties and grades of grain.

Other Services

Pesticide Residue Surveys. The service of monitoring Canadian grain for the possible presence of chemical pesticide residues is continuing on a regular basis. Export cargoes from all Canadian ports of hard red spring wheat (1,100 cargoes), amber durum wheat (200), and barley (700) were checked for organochlorine pesticide residues during the year. Satisfactory progress has been made in investigations on methods for monitoring organophosphate-type residues.

Entomological Surveys. As a result of unfavorable weather conditions at harvest time, the 1968 grain crop was generally low in quality and had a higher than normal moisture content. Large quantities of this type of grain were stored on farms and in country elevators for unusually long periods of time and were subjected to above-normal summer temperatures. This combination of circumstances produced storage conditions which were conducive to insect infestation problems.

In conjunction with officials of the Canada Department of Agriculture and of the provincial departments of agriculture in Western

Canada, infestation surveys of country elevator grain stocks were conducted and more than 10,000 samples taken from elevator storage bins were examined in the Board's entomological laboratory. Additional samples were submitted by elevator managers for insect analyses. Where insect infestations were detected, the elevator licensees were provided with information and advice as to appropriate control measures to be undertaken. In a few instances, the Board found it necessary to suspend the licences of country elevators while infested grain stocks were undergoing extensive fumigation.

During 1970, the Inspection Division detected an above-average number of infested carlots of grain on arrival at terminal elevators. All of this grain was given appropriate treatment under supervision of Inspection Division staff to ensure that elevator facilities and grain stocks would not be contaminated. The Board's entomologist made periodic inspections of terminal and eastern elevators and conducted special studies relating to the handling of export grain through these facilities. The entomologist recommended improvements in housekeeping and insect control practices where such were required, and elevator managers co-operated with the Board in adopting the recommendations.

Moisture-testing Equipment Service. The Research Laboratory continued its service of controlling the accuracy of Model 919 meters and Brown-Duvel oil distillation units located in the various offices of the Grain Inspection Division across Canada. Two new calibration charts were released for barley, and two for mustard seed (one for yellow, and one for brown and oriental). In addition, information was provided that a constant correction factor may be added to the Eastern rye chart for use with the large kernel Tetra Pektus rye.

Grain Appeal Tribunal. A total of 286 appeals were dealt with by the Grain Appeal Tribunal at Winnipeg. These pertained to the unload grades of cars officially inspected in the Western Division. The grades assigned by the Inspection Division were sustained in 258 cases. The number of appeals dealt with during the crop year and the wide range of grades included in the samples reviewed by the Tribunal reflected unfavorable climatic conditions during the harvest season, with resulting deterioration of crop quality.

Grading Services to Producers. A total of 37,116 "Subject to Grade and Dockage" samples submitted jointly by producers and elevator agents, and other unofficial samples of grain and oilseeds were inspected in the 1969-70 crop year.

The Inspection Division handled 17 requests for review of samples representing grain delivered to country elevators on a special bin basis and shipped to terminal elevators in carload lots.

Service to Other Organizations. The Statistics Division functioned as a statistical support agency for the Canadian Wheat Board supplying to that Board all major reports and publications compiled by the Division, particularly those related to country elevator operations and the positioning of grain stocks. This office and the Canadian Wheat

Board also co-operated in the exchange of information for use by electronic data processing equipment.

The Division served as the prime source of grain handling statistics pertaining to the licensed elevator system for incorporation in a variety of statistical releases by the Dominion Bureau of Statistics. In particular, this office supplied the Agricultural Division of the Bureau with the primary material for the joint annual publication, *GRAIN TRADE OF CANADA*.

Special Acts Administration. Under the provisions of the Prairie Farm Assistance Act, during the 1969-70 crop year the Board collected \$5,451,833, covering the 1 per cent levy on grain purchased by licensees under the Canada Grain Act. This was a decrease of \$465,550 from collections recorded for the previous crop year. Levy collections to July 31, 1970, total \$207,378,387.

The Board did not find it necessary to establish any maximum freight rates under the provisions of the Inland Water Freight Rates Act.

SECTION 4—PERSONNEL ADMINISTRATION

The major change in personnel administration during the year was the implementation of Data Stream, a Public Service Commission data system for training, research, employment and appraisal of manpower which provides a common bank of information composed of a record of each employee in the Executive, Scientific and Professional, Administrative and Foreign Service and Technical categories. Implementation of a new employee appraisal system, an adjunct to Data Stream, was started during the latter part of the year.

Staffing. At December 31, 1970, total staff, exclusive of the Canadian Government Elevators, was 832 compared with 779 at the end of 1969. The increase resulted from a much larger grain movement and preparatory activities for the pending introduction of protein as a factor in the grading of wheat.

The staff of the Canadian Government Elevators totaled 186 at December 31, 1970, an increase of 38 from the previous year. Most of the additional employees were engaged on a temporary basis to provide for the handling of a greater volume of grain during the latter part of the year.

Commissioner A. V. Svoboda retired from the Board in August, 1970 and was succeeded by Mr. H. D. Pound. Senior officers of the Board retiring during the year were: Mr. W. J. MacLeod, Special Assistant to the Board; Mr. H. C. Britton, Chief Grain Weighman; Mr. C. H. Owen, Assistant Chief Grain Inspector; and Mr. J. L. Freeman, Assistant Director of the Statistics Division. Awards were received by 55 employees in recognition of 25 years in the Public Service of Canada.

Collective Agreements. All 18 occupational groups of employees of the Board were under collective agreements. During the year, two agreements and a major arbitral award were renegotiated and implemented. Further progress was made in the classification conversion of positions in the Chemistry Group.

Staff Training and Development. The level of development, education and training was well maintained in all Divisions. The Inspection Division continued a well-directed plan of studies and examinations for grain inspectors at their various levels. Senior officers of the Weighing Division conducted training sessions for members of the operating staff to provide instruction on such matters as weighing procedures, operation of automatic scales, and safety devices and precautions.

During the year, a number of employees took educational courses related to their duties and costs were partly subsidized from public funds.

APPENDIX A

Grain Statistics and Quality

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A-1—Supply and Disposition of Canadian Grain, Crop Year 1969-70

	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed	Total
— thousands of bushels —							
SUPPLY							
Carry-over July 31, 1969	851,639	128,642	199,373	8,641	4,906	5,067	1,198,268
Production in 1969	684,276	371,387	378,383	16,493	27,548	33,400	1,511,487
Total Supply	1,535,915	500,029	577,756	25,134	32,454	38,467	2,709,755
DISPOSITION							
Exports*	346,630	4,899	88,313	3,829	19,686	22,206	485,563
Consumed in Canada	180,595	353,790	289,365	10,658	6,798	12,628	853,834
Total Disposition	527,225	358,689	377,678	14,487	26,484	34,834	1,339,397
CARRY OVER JULY 31, 1970							
On Farms (estimated)	542,700	123,000	122,000	4,700	600	150	793,150
In country, private, terminal and mill elevators	369,114	13,444	59,885	4,685	4,376	3,034	454,538
In store and afloat at eastern elevators	60,607	2,817	9,524	482	496	2	73,928
In eastern flour mills	3,179	202	—	—	—	—	3,381
In transit by rail—eastern and western divisions	33,090	1,877	8,669	465	498	447	45,046
In store and in transit to the U.S.A.	—	—	—	315	—	—	315
Total in store July 31, 1970	1,008,690	141,340	200,078	10,647	5,970	3,633	1,370,358

* Includes 27,033,179 bushels of wheat flour, 1,894,307 bushels of bagged seed wheat, 60,869 bushels of rolled oats and oatmeal, 5,607,906 bushels of barley malt and 1,074,722 bushels of flaxseed in linseed oil form.

A-2—Licences in Force and Storage Capacity, August 1, 1970 and 1969

Type of licence	Licences in force		Licensed storage capacity	
	August 1 1970	1969	1970	Aug. 1 1969
Country elevator	4,972	4,984	398,832,250	396,341,250
Terminal and mill elevator	58	60	169,353,710	171,793,710
Eastern elevator	30	30	131,827,300	131,827,300
Track buyer, commission merchant and grain dealer	32	31	*	*
Totals	5,092	5,105	700,013,260	699,962,260

* These licences do not cover grain storage facilities.

A-3—Inward Carlot Inspections of Western Grain, Crop Year 1969-70

Grade	Carlots	Percentage	Percentage of total wheat inspected
WHEAT			
1 Manitoba Northern	12,667	6.7	—
2 Manitoba Northern	63,823	33.6	—
3 Manitoba Northern	40,959	21.6	—
Tough 1 to 3 Manitoba Northern	9,802	5.2	—
4 Manitoba Northern	21,068	11.1	—
Tough 4 Manitoba Northern	17,341	9.1	—
4 Special	30	*	—
No. 5	11,400	6.0	—
No. 6	1,535	.8	—
Feed	182	.1	—
Garnet	4	*	—
Tough others	8,113	4.3	—
Damp	1,589	.8	—
Rejected	1,209	.6	—
Others red spring	138	.1	—
Total red spring wheat	189,860	100.0	91.8
1 Canada Western Amber Durum	1,463	9.9	—
2 Canada Western Amber Durum	4,672	31.6	—
3 Canada Western Amber Durum	3,081	20.9	—
Extra 4 Canada Western Amber Durum	3,003	20.3	—
4 Canada Western Amber Durum	1,046	7.1	—
5 Canada Western Amber Durum	59	.4	—
6 Canada Western Amber Durum	4	*	—
Tough durum	938	6.4	—
Others durum	497	3.4	—
Total amber durum wheat	14,763	100.0	7.1
Total soft white spring	429	—	.2
Total mixed wheat	125	—	.1
Total Alberta winter wheat	1,734	—	.8
Total all wheats	206,911	—	100.0

* Less than 0.05%.

A-3—Inward Carlot Inspections of Western Grain, Crop Year 1969-70 (Continued)

Grade	Carlots	Percentage
OATS		
1 Canada Western	—	—
2 Canada Western	38	.5
Extra 3 Canada Western	256	3.0
3 Canada Western	897	10.7
Extra 1 Feed	825	9.9
1 Feed	4,492	53.6
2 Feed	460	5.5
3 Feed	150	1.8
Mixed Feed	67	.8
Tough	884	10.6
Damp	3	*
Rejected	137	1.6
Others	168	2.0
Total oats	8,377	100.0
BARLEY		
1 Canada Western Six-Row	24	*
2 Canada Western Six-Row	586	.8
3 Canada Western Six-Row	7,630	10.7
Tough 1 to 3 Canada Western Six-Row	232	.3
1 Canada Western Two-Row	7	*
2 Canada Western Two-Row	838	1.2
3 Canada Western Two-Row	3,555	5.0
Tough 1 to 3 Canada Western Two-Row	22	*
1 Feed	38,058	53.3
2 Feed	11,110	15.6
3 Feed	910	1.3
Tough others	7,668	10.7
Damp	402	.6
Rejected	260	.4
Others	97	.1
Total barley	71,399	100.0

*Less than 0.05%.

A-3—Inward Carlot Inspections of Western Grain, Crop Year 1969-70
(Continued)

Grade	Carlots	Percentage
RYE		
1 Canada Western	7	.2
2 Canada Western	1,687	48.2
3 Canada Western	1,200	34.3
4 Canada Western	148	4.2
Ergoty	24	.7
Tough	420	12.0
Damp	3	.1
Rejected	6	.2
Others	4	.1
Total rye	3,499	100.0
FLAXSEED		
1 Canada Western	8,999	70.1
2 Canada Western	472	3.7
3 Canada Western	151	1.2
4 Canada Western	26	.2
Tough	2,736	21.3
Damp	257	2.0
Rejected	120	.9
Others	72	.6
Total flaxseed	12,833	100.0
RAPESEED		
1 Canada	12,037	93.0
2 Canada	353	2.7
3 Canada	107	.8
Others	456	3.5
Total rapeseed	12,953	100.0

A-3—Inward Carlot Inspections of Western Grain, Crop Year 1969-70 (Concluded)

Grade	Carlots	Percentage
MUSTARD SEED		
1 Canada Western Yellow	41	5.2
2 Canada Western Yellow	11	1.4
3 Canada Western Yellow	3	.4
4 Canada Western Yellow	3	.4
1 Canada Western Oriental	101	12.7
2 Canada Western Oriental	79	9.9
3 Canada Western Oriental	128	16.1
4 Canada Western Oriental	25	3.1
1 Canada Western Brown	173	21.7
2 Canada Western Brown	38	4.8
3 Canada Western Brown	5	.6
4 Canada Western Brown	1	.1
Sample grades	12	1.5
Special bin	176	22.1
Total mustard seed	796	100.0
OTHER GRAINS		
Corn	23	—
Sunflower seed	—	—
Mixed grain	203	—
Screenings	322	—
Buckwheat	535	—
Soybeans	—	—
Peas	25	—
Sample grain	40	—
Safflower seed	1	—
Condemned grain	28	—
	1,177	—
Grand total	317,945	—

**A-4—Samples of Western Grain "Subject to Grade and Dockage" and Other
Unofficial Samples Inspected, Crop Year 1969-70,
Compared with Crop Year 1968-69**

Point	1969-70	1968-69
	Number of samples	
Winnipeg	14,817	16,950
Calgary	13,248	2,453
Edmonton	1,674	2,214
Moose Jaw	60	180
Saskatoon	1,238	1,986
Lethbridge	6,079	7,954
Totals	37,116	31,737

**A-5—Inward Carlot Re-inspections of Western Grain,
Crop Year 1969-70**

Point	Inspected	Re- inspected	Un- changed	Grades raised	Grades lowered	Dockage raised	Dockage lowered
Thunder Bay	181,018	13,089	12,175	879	17	9	9
Winnipeg	6,969	850	756	71	22	—	1
Churchill	11,500	526	488	27	10	—	1
Moose Jaw	126	40	32	8	—	—	—
Saskatoon	4,473	503	439	63	1	—	—
Calgary	3,519	182	143	39	—	—	—
Edmonton	1,002	74	72	2	—	—	—
Medicine Hat	2,338	145	115	29	—	—	1
Lethbridge	279	18	18	—	—	—	—
Prince Rupert	5,067	271	264	7	—	—	—
Vancouver	101,663	9,528	8,348	1,146	10	4	20
Totals	317,954	25,226	22,850	2,271	60	13	32
Percentage of total carlots	100.0	7.9	7.2	.7	*	*	*

*Less than 0.05%.

A-6—Outward Carlot Inspections of Western Grain at Terminal and Mill Elevators, Crop Year 1969-70

Grain	Winnipeg	Thunder Bay	Calgary	Edmonton	Moose Jaw
Wheat	140	1,579	88	90	61
Oats	357	1,511	23	22	9
Barley	121	1,891	486	24	30
Flaxseed	4	1,110	19	79	—
Rye	—	28	—	—	—
Mixed grain	18	29	4	5	—
Corn	—	—	—	—	—
Buckwheat	—	—	—	—	—
Peas	63	—	—	—	—
Screenings	177	4,066	89	57	91
Rapeseed	1	178	66	145	—
Sample feed grain	30	—	33	—	1
Mustard seed	1	—	78	53	51
Sample grain	3	92	—	—	—
Totals	915	10,484	886	475	243

	Saskatoon	Lethbridge	Medicine Hat	Vancouver, Victoria and Prince Rupert	Churchill
Wheat	400	33	20	48	—
Oats	74	—	—	159	—
Barley	35	4	6	19	—
Flaxseed	—	—	—	—	—
Rye	4	—	—	19	—
Mixed grain	4	—	6	9	—
Corn	—	—	—	—	—
Buckwheat	—	—	—	—	—
Peas	—	—	—	—	—
Screenings	376	8	5	1,379	—
Rapeseed	477	—	—	3	—
Sample feed grain	3	—	—	—	—
Mustard seed	14	64	—	—	—
Sample grain	—	—	—	—	—
Totals	1,387	109	37	1,636	—

A-7—Carlot Inspections of Eastern Grain, Crop Year 1969-70

Grade	Montreal	Toronto	Chatham	Total
WHEAT				
1 Canada Eastern White Winter	—	—	68	68
2 Canada Eastern White Winter	—	1	750	751
3 Canada Eastern White Winter	—	19	271	290
4 Canada Eastern White Winter	—	13	89	102
5 Canada Eastern White Winter	1	3	73	77
2 Canada Eastern Red Winter	—	—	1	1
2 Canada Eastern Mixed Winter	—	—	3	3
3 Canada Eastern Mixed Winter	—	2	1	3
Tough	—	40	335	375
Damp	—	—	3	3
Sample	1	2	637	640
Totals	2	80	2,231	2,313
BARLEY				
3 Canada Eastern Six Row	—	—	154	154
3 Canada Eastern Two Row	—	—	21	21
4 Canada Eastern	—	—	4	4
Tough	—	—	9	9
Totals	—	—	188	188
RYE				
2 Canada Eastern	—	—	2	2
3 Canada Eastern	—	—	1	1
Tough	—	—	7	7
Totals	—	—	10	10

**A-7—Carlot Inspections of Eastern Grain, Crop Year 1969-70
(Concluded)**

Grade	Montreal	Toronto	Chatham	Total
CORN				
Extra Dry 1 Canada Eastern Yellow	—	—	331	331
1 Canada Eastern Yellow	—	—	448	448
Extra Dry 2 Canada Eastern Yellow	—	—	327	327
2 Canada Eastern Yellow	—	—	509	509
Extra Dry 3 Canada Eastern Yellow	—	—	78	78
3 Canada Eastern Yellow	—	1	165	166
Extra Dry 4 Canada Eastern Yellow	—	1	20	21
4 Canada Eastern Yellow	—	—	39	39
Extra Dry 5 Canada Eastern Yellow	—	—	11	11
5 Canada Eastern Yellow	—	—	13	13
Tough	—	—	115	115
Damp	—	—	86	86
Moist	—	—	62	62
Wet	—	—	2	2
Sample	—	—	5	5
Totals	—	2	2,211	2,213
BEANS				
Extra 1 Canada Eastern Pea	—	—	7	7
1 Canada Eastern Pea	—	—	67	67
2 Canada Eastern Pea	—	—	4	4
3 Canada Eastern Pea	—	—	3	3
Totals	—	—	81	81
SOYBEANS				
1 Canada Yellow	—	2	442	444
2 Canada Yellow	—	1	297	298
3 Canada Yellow	—	—	10	10
4 Canada Yellow	—	—	1	1
Tough	—	3	309	312
Damp	—	1	2	3
Totals	—	7	1,061	1,068
Totals, all grains	2	89	5,782	5,873

A-8—Inspections of Eastern Grain in Cargoes, Bins, Trucks or Warehouses, Crop Year 1969-70

Grain	Montreal	Toronto	Chatham	Total
		— bushels —		
Wheat	94,872	—	2,576,616	2,671,488
Oats	500	—	—	500
Barley	28,782	—	—	28,782
Corn	—	—	1,699,099	1,699,099
Beans	—	1,767	1,137,227	1,138,994
Soybeans	—	1,575	865,791	867,366
Buckwheat	37,981	—	—	37,981
Totals	162,135	3,342	6,278,733	6,444,210

**A-9—Inward and Export Cargoes Sampled and Inspected,
Crop Year 1969-70**

	Montreal	Sorel	Three Rivers	Quebec	Halifax and Saint John	Baie Comseau	Port Cartier	Total
Eastern grain				— bushels —				
Inward	267,479	—	—	—	—	—	—	267,479
Export	49,465,612	23,047,989	—	44,791	485,594	—	—	2,244,222
Western grain								
Inward	6,570,906	—	—	—	—	1,829,456	245,197	8,645,559
Export	49,465,612	23,047,989	15,303,088	13,381,923	31,963,047	20,946,215	46,348,724	200,456,598
Totals	58,017,834	23,047,989	15,303,088	13,426,714	32,448,641	22,775,671	46,593,921	211,613,858

A-10—Grain Sampled but not Inspected, Crop Year 1969-70

	Montreal	Toronto and Chatham	Sorel Quebec and Three Rivers	Halifax and St. John	Baie Comeau	Port Cartier	Total
Eastern grain							
Carlots	9	—	—	—	—	—	9
Inward cargoes (bu.)	133,534	—	—	—	—	—	133,534
Outward cargoes (bu.) ..	23,410	—	—	—	—	—	23,410
Bin lots (bu.)	773,410	—	—	—	—	—	773,410
Western grain							
Carlots	69	—	—	—	—	—	69
Inward cargoes (bu.)	7,758,645	—	—	—	—	—	7,758,645
Outward cargoes (bu.)....	155,325	—	—	—	506,874	404,760	1,066,959
Bin lots (bu.)	90,160	—	—	—	—	—	90,160
U.S.A. grain							
Carlots	43	—	—	—	—	—	43
Inward cargoes (bu.).....	11,207,353	—	—	—	—	602,198	11,809,551
Outward cargoes (bu.) ..	2,679,972	—	16,190,403	—	36,857,113	19,929,028	75,656,516
Bin lots (bu.)	1,549,643	—	—	—	—	—	1,549,643
Totals—cars	121					—	121
 bushels	24,371,452	—	16,190,403	—	37,363,987	20,935,986	98,861,828

A-11—Gross Quantities of Grain Inspected and Weighed at Terminal Elevators, Crop Year 1969-70

Point	Wheat	Oats	Barley	Rye	Flexseed
RECEIPTS					
	— bushels —				
Thunder Bay	218,697,273	21,015,652	114,848,168	4,524,619	16,514,878
Vancouver — New Westminster	125,624,656	83,888	37,735,851	2,518,827	8,632,192
Victoria	5,741,096	1,034	—	—	—
Prince Rupert	9,747,221	—	15,788	—	—
Churchill	22,098,494	—	—	—	—
Calgary	217,104	—	1,248,016	2,116	41,242
Edmonton	825,477	6,170	47,675	—	202,492
Lethbridge	28,585	—	12,474	—	—
Moose Jaw	404,277	3,219	115,790	2,138	—
Saskatoon	1,258,292	—	5,550	—	—
Total Receipts	384,642,475	21,110,963	154,029,312	7,047,700	25,390,804
SHIPMENTS					
	— bushels —				
Thunder Bay	221,686,257	30,751,853	104,759,154	3,170,589	13,842,637
Vancouver — New Westminster	119,949,943	534,452	36,511,829	2,290,671	7,901,760
Victoria	5,759,125	37,574	2,719	—	68
Prince Rupert	9,283,702	72,058	15,690	—	—
Churchill	21,966,707	259,534	—	—	—
Calgary	221,838	25,265	1,140,154	2,116	38,559
Edmonton	322,327	21,287	46,760	—	162,577
Lethbridge	78,085	2,500	12,474	—	—
Moose Jaw	161,100	12,690	115,790	2,138	—
Saskatoon	722,054	—	4,936	—	—
Total Shipments	380,151,138	31,717,213	142,609,506	5,465,514	21,945,601

**A-11—Gross Quantities of Grain Inspected and Weighed at Terminal
Elevators, Crop Year 1969-70
(Concluded)**

Point	Corn	Buckwheat	Mustard Seed	Rapeseed	Miscellaneous*
RECEIPTS					
			— bushels —		
Thunder Bay	—	203	596,270	5,734,246	4,046,211
Vancouver — New Westminster	—	1,187,479	701,368	20,513,050	3,569,032
Victoria	—	—	—	—	—
Prince Rupert	—	—	—	—	159,481
Churchill	—	—	—	—	—
Calgary	—	—	86,663	151,086	1,822
Edmonton	—	—	69,828	330,797	2,288
Lethbridge	—	—	48,470	—	—
Moose Jaw	—	—	158,217	—	—
Saskatoon	—	—	37,736	126,581	368
Total Receipts	—	1,187,682	1,698,552	26,855,760	7,779,202
SHIPMENTS					
			— bushels —		
Thunder Bay	—	—	450,466	4,807,439	17,411,013
Vancouver — New Westminster	—	1,065,901	576,711	17,645,592	10,769,804
Victoria	—	—	—	—	211,192
Prince Rupert	—	—	—	—	333,552
Churchill	—	—	—	—	182,753
Calgary	—	—	170,256	133,562	81,317
Edmonton	—	—	123,015	278,133	76,514
Lethbridge	—	—	69,747	—	13,392
Moose Jaw	—	—	102,576	—	137,883
Saskatoon	—	—	31,146	108,981	142,191
Total Shipments	—	1,065,901	1,523,917	22,973,707	29,359,611

(*) 50 pounds per bushel.

**A-12—Carlots Weighed, Leaking or with Defective Seals, in the
Western Division
Crop Years 1968-69 and 1969-70**

	Number		Percentage of Total	
	1969-70	1968-69	1969-70	1968-69
Cars weighed in	320,748	277,326	100.0	100.0
Inward cars leaking	45,858	43,900	14.3	15.8
Inward cars with missing or defective seals	10,637	9,080	3.3	3.3
Cars weighed out	17,502	25,086	—	—

**A-13—Average Reported Outturn Shortage on Vessel Shipments of Grain
from Thunder Bay to Licensed Eastern Elevators
Crop Year 1969-70**

Grain	Bushels Shipped	Shortage in pounds per 1000 bushels	
		1969-70	1968-69
Wheat	192,461,564	37.19	34.75
Durum Wheat	23,277,583	37.22	44.22
Oats	23,183,300	24.64	24.83
Barley	79,055,138	35.71	33.92
Rye	1,490,949	39.60	58.34
Flaxseed	9,620,829	29.35	38.10
Rapeseed	3,153,526	—	35.11
Screenings (in tons)	101,996	2.65 per ton	1.97 per ton

A-14—Tough and Damp Grain Dried at Terminal Elevators Crop Year 1969-70

	Artificial Drying				
	Tough	Damp	Tough and Damp	Natural Drying	Total
Lakehead					
			— bushels —		
Wheat	24,832,003	866,076	25,698,079	9,553,205	35,251,284
Durum	1,422,717	236,657	1,659,374	691,908	2,351,282
Oats	330,258	7,123	337,381	967,301	1,304,682
Barley	1,937,984	298,213	2,236,197	5,582,584	7,818,781
Rye	353,756	6,483	360,239	432,020	792,259
Flaxseed	3,343,249	375,064	3,718,313	550,879	4,269,192
Mixed Grain*	1,388	7,432	8,820	2,707	11,527
Buckwheat	—	—	—	—	—
Rapeseed	—	—	—	2,249	2,249
Mustard Seed	1,661	2,035	3,696	—	3,696
Totals	32,223,016	1,799,083	34,022,099	17,782,853	51,804,952
Pacific Coast					
Wheat	26,751,106	2,309,688	29,060,794	4,821,273	33,882,067
Durum	—	—	—	13,936	13,936
Oats	88	1,127	1,215	251	1,466
Barley	5,390,889	565,091	5,955,980	2,421,000	8,376,980
Rye	24,427	—	24,427	103,427	127,854
Flaxseed	264,831	19,166	283,997	149,934	433,931
Mixed Grain*	6,158	143	6,301	—	6,301
Buckwheat	244,116	179,397	423,513	20,923	444,436
Rapeseed	30,762	12,249	43,011	290,611	333,622
Mustard Seed	—	—	—	2,285	2,285
Totals	32,712,377	3,086,861	35,799,238	7,823,640	43,622,878
Interiors					
Wheat	2,619,658	9,819	2,629,477	6,158	2,635,635
Durum	—	3,375	3,375	—	3,375
Oats	198	—	198	—	198
Barley	—	—	—	—	—
Rye	—	—	—	—	—
Flaxseed	47,447	8,596	56,043	—	56,043
Mixed Grain*	—	302	302	—	302
Rapeseed	—	5,583	5,583	—	5,583
Mustard Seed	—	—	—	—	—
Totals	2,667,303	27,675	2,694,978	6,158	2,701,136
Churchill					
Wheat	—	—	—	103,703	103,703
Total, all positions	67,602,696	4,913,619	72,516,315	25,716,354	98,232,669

* 50 pounds per bushel.

A-15—Quality Data for Grades of Hard Red Spring Wheat Marketed Crop Year 1969-70

	1 Nor.	2 Nor.	3 Nor.	4 Nor.	No. 5	No. 6
Test weight, Avery, lb./bu.	65.4	64.6	63.4	62.0	59.5	57.1
1000 kernel weight, g.	30.1	29.5	30.5	31.0	30.4	26.1
Wheat protein content, % 1/	13.8	13.7	13.7	13.7	13.3	13.4
Flour protein content, % 2/	13.2	13.1	13.1	12.8	12.2	12.0
Flour yield, %	75.1	75.0	75.0	73.9	71.4	65.8
Flour ash content, %	0.44	0.45	0.47	0.47	0.52	0.60
Flour diastatic activity, mg.	166	167	183	218	305	422
Baking absorption, %	62.0	62.0	62.0	62.0	59.0	59.0
Loaf volume, cc.	855	855	880	835	680	510

1/ 13.5% moisture basis

2/ 14.0% moisture basis

A-16—Carlot Inspections Appealed, Crop Year 1969-70

Item	Carlots	Percentage
Left as graded	258	90.2
Grades raised	28	9.8
Grades lowered	—	—
Totals	286	100.0

A-17—Prairie Farm Assistance Act Collections, Crop Year 1969-70

Province	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed	Total
	\$	\$	\$	\$	\$	\$	\$
Manitoba	348,955.73	24,906.00	89,467.00	9,345.73	95,945.51	21,616.96	590,236.93
Sask.	2,762,579.95	17,693.29	329,544.03	34,908.55	167,381.49	211,011.11	3,523,118.42
*Alberta	821,000.45	14,931.33	292,618.74	8,319.89	84,896.65	116,710.55	1,338,477.61
Totals	3,932,536.13	57,530.62	711,629.77	52,574.17	348,223.65	349,338.62	5,451,832.96

Penalties on late filing of returns

**Total collections August 1, 1969
to July 31, 1970**

5,451,832.96

* Includes Peace River area in B.C.

**A-18—Weighted Average Lake Freight Rates on Canadian Grain from
Thunder Bay
Season of Navigation 1970***

Port of Discharge	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed
— cents per bushel —						
Georgian Bay Ports, Goderich,						
Sarnia and Walkerville	4.693	4.795	5.108	5.829	—	—
Port Colborne	6.232	6.273	6.630	—	—	—
Toronto	7.25	6.5	7.096	7.25	7.75	—
Kingston	6.75	6.0	6.75	—	—	—
Prescott	7.544	5.773	7.024	7.25	—	—
Montreal	8.985	6.645	8.016	9.817	9.236	9.534
Sorel	8.973	5.807	8.357	8.5	—	—
Three Rivers	9.064	7.334	8.460	9.5	—	—
Quebec	9.191	6.822	8.418	9.338	9.492	9.458
Baie Comeau	9.264	—	8.176	—	9.5	9.327
Port Cartier	9.021	8.5	8.326	8.5	9.421	—
Halifax	15.654	12.229	14.704	—	—	—
Halifax via Baie Comeau	—	—	15.0	—	—	—
Other Maritimes	22.373	23.726	18.016	—	—	—
Buffalo	—	—	9.928	—	—	—
Chicago	—	—	—	9.325	—	—
Duluth-Superior	—	—	6.925	6.5	—	—
Manitowoc	—	—	8.0	—	—	—
Wilwaukee	—	—	8.586	—	—	—

* Rates originally quoted in United States funds have been converted to Canadian currency at the prevailing rates of exchange.

APPENDIX B

Amendments to Canada Grain Regulations

Section 33 and Schedule H of the Canada Grain Regulations were amended, effective November 1, 1970, to institute a revised procedure relating to returns to shippers for screenings and machine separations from carlots of grain unloaded at terminal elevators.

Committee on Western Grain Standards as at December 31, 1970

F. F. Hamilton	Chief Commissioner	} Board of Grain Commissioners
C. L. Shuttleworth	Commissioner	
H. D. Pound	Commissioner	
M. M. Ainslie	Chief Grain Inspector	
Dr. G. N. Irvine	Chief Chemist	
J. L. A. Doray	Chairman, Grain Appeal Tribunal	
Dr. J. W. Morrison	Dominion Cerealist	
L. A. McCorquodale	representing the millers of wheat flour	
H. Anderson	} representing grain growers in Alberta	
R. J. Graham		
E. F. Seney		
K. Anderson		
G. South	} representing grain growers in Saskatchewan	
D. L. Yonge		
L. L. Gray		
N. W. Strelloff		
W. J. Parker	} representing grain growers in Manitoba	
P. A. McPhail		
Ray Mitchell		
G. Constable	representing grain growers in British Columbia	
M. H. Rowland	representing Plant Products Division, Canada Department of Agriculture	

Committee on Eastern Grain Standards as at December 31, 1970

F. F. Hamilton	Chief Commissioner	} Board of Grain Commissioners
C. L. Shuttleworth	Commissioner	
H. D. Pound	Commissioner	
M. M. Ainslie	Chief Grain Inspector	
M. Pardo	representing Montreal Board of Trade	
C. F. Bowker	representing Toronto Board of Trade	
C. Gordon McAuley	representing exporters of grain	
F. H. Dunsford	} representing millers of wheat in the Eastern Division	
C. L. Rogers		
H. Pitz	} representing grain growers in Ontario	
C. W. Huffman		
G. C. Nichols	representing growers of corn	
A. Bowman	Additional	
E. Cordeau	Additional	

APPENDIX C

List of Publications

Title	Issued
<i>Canada Grain Regulations</i>	Annually
<i>Annual Report, Board of Grain Commissioners</i>	Annually
<i>Canadian Grain Position</i>	Weekly
<i>Exports of Canadian Grain</i>	Monthly
<i>Canadian Grain Exports</i>	Annually
<i>Marketings, Distribution and Visible Carry-over of Canadian Grain</i>	Annually
<i>Grain Elevators in Canada</i>	Annually
<i>Summary of Country Elevator Receipts at Individual Prairie Points</i>	Annually
<i>Grain Research Laboratory Annual Report</i>	Annually
<i>Canadian Wheat. Crop Bulletin</i>	Annually
<i>Canadian Barley. Crop Bulletin</i>	Annually
<i>Canadian Flax and Rapeseed. Crop Bulletin</i>	Annually
<i>Canadian Wheat Cargoes. Bulletin</i>	Quarterly
<i>Canadian Durum Cargoes. Bulletin</i>	Quarterly
<i>Map of Western Canada showing the protein content of hard red spring wheat</i>	Annually
<i>Official Canadian Grain Grading Guide</i>	Annually
<i>Identification of Barley and Wheat Varieties</i>	
<i>Handbook on the Sale and Handling of Grain Through a Country Elevator</i>	
<i>The Farmer and the Country Elevator</i>	

Further information on Board of Grain Commissioners Laboratory scientific and technical publications will be found in the Laboratory's 1970 Annual Report.

APPENDIX D

Revenue and Expenditure

Earned revenue and net expenditure of the Board, including the Canadian Government Elevators, for the fiscal year 1969-70 compared with 1968-69 were as follows:

	1969-70	1968-69
Revenue	\$7,254,996	\$ 7,144,409
Expenditure	9,587,468	10,968,546

Further information is given in the following tables.

**D-1—Earned Revenue and Net Expenditure, by Points and Division,
Fiscal Year ended March 31, 1970**

	Executive and Admin- istration	Inspection	Weighing	Statistics	Research Laboratory	Canadian Government Elevators	Total
REVENUE							
				dollars			
Winnipeg	1,140	75,354	34,083	122,249	—	3,040,392	3,273,218
Churchill	—	101,404	51,719	1,860	—	—	154,983
Saskatoon	—	54,114	41,418	—	—	—	95,532
Moose Jaw	—	14,233	4,506	—	—	—	18,739
Medicine Hat	—	6,873	29,230	—	—	—	36,103
Lethbridge	—	10,951	935	—	—	—	11,886
Calgary	—	29,263	37,467	—	—	—	66,730
Edmonton	—	12,720	3,923	—	—	—	16,643
Vancouver	—	837,727	408,289	53,963	—	—	1,299,979
Victoria	—	24,151	10,345	—	—	—	34,496
Prince Rupert	—	34,271	16,736	—	—	—	51,007
Thunder Bay	—	1,373,127	666,121	—	—	—	2,039,248
Toronto	—	8,373	—	—	—	—	8,373
Chatham	—	65,041	—	—	—	—	65,041
Montreal	—	28,282	—	17,341	—	—	45,623
Baie Comeau	—	8,506	11,394	—	—	—	19,900
Port Cartier	—	9,111	8,384	—	—	—	17,495
Totals	1,140	2,693,501	1,324,550	195,413	—	3,040,392	7,254,996
EXPENDITURE							
				dollars			
Winnipeg	334,722	645,269	167,763	391,369	785,242	2,493,835	4,818,200
Churchill	—	10,017	9,042	—	—	—	19,059
Saskatoon	25,325	78,560	49,188	—	—	—	153,073
Moose Jaw	—	16,866	12,672	—	—	—	29,538
Regina	26,559	—	—	—	—	—	26,559
Medicine Hat	—	—	16,557	—	—	—	16,557
Lethbridge	—	25,488	7,273	—	—	—	32,761
Calgary	—	115,417	88,467	—	—	—	203,894
Edmonton	27,880	72,910	19,549	—	—	—	120,339
Vancouver	—	616,286	469,961	101,297	—	—	1,187,544
Victoria	—	33,358	23,230	—	—	—	56,588
Prince Rupert	—	32,795	31,730	—	—	—	64,525
Thunder Bay	—	1,276,817	988,365	110,321	—	—	2,375,503
Toronto	—	17,888	—	—	—	—	17,888
Chatham	—	90,219	—	—	—	—	90,219
Montreal	—	275,356	15,663	28,970	—	—	319,989
Baie Comeau	—	19,293	11,373	—	—	—	30,666
Port Cartier	—	24,566	—	—	—	—	24,566
Totals	414,486	3,351,115	1,910,833	631,957	785,242	2,493,835	9,587,468

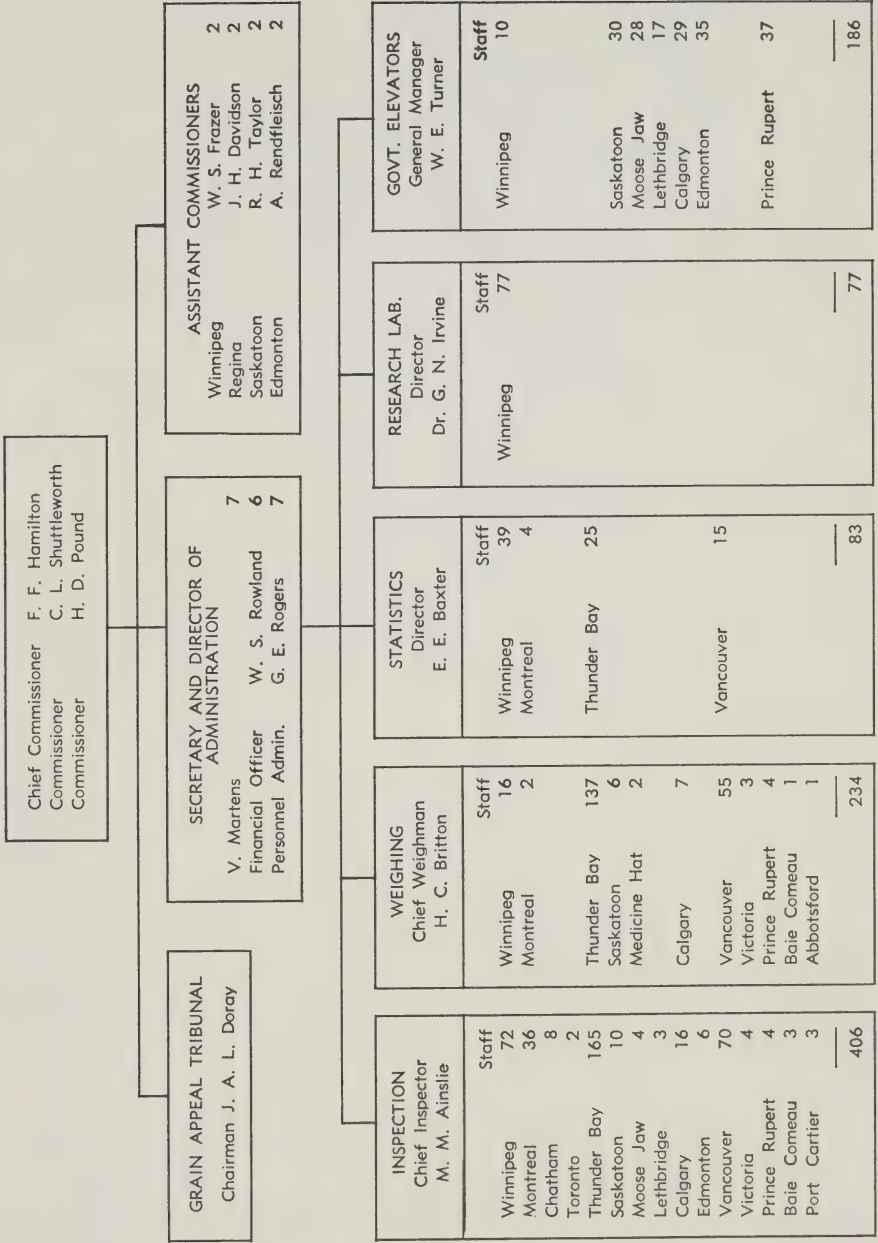
Note: Revenue and Expenditures for all Government Elevators shown opposite Winnipeg.

D-2—Summary of Operations by Divisions, Fiscal Year Ended March 31, 1970

	Executive and Admin- istration	Inspection	Weighing	Statistics	Research Laboratory	Canadian Government Elevators	Total
REVENUE							
	— dollars —						
Fees	—	2,650,657	1,309,923	195,413	—	—	4,155,993
Overtime	—	23,180	14,419	—	—	—	37,599
Express Charges	—	3,962	—	—	—	—	3,962
Samples Sold	—	14,971	—	—	—	—	14,971
Refund of previous year's expenditures	—	731	208	—	—	—	939
Miscellaneous	1,140	—	—	—	—	—	1,140
Grain Handling Charges	—	—	—	—	—	3,040,392	3,040,392
Totals	1,140	2,693,501	1,324,550	195,413	—	3,040,392	7,254,996
EXPENDITURE							
	— dollars —						
Salaries	319,327	3,030,306	1,840,536	480,969	533,472	1,368,132	7,572,742
Rent of Buildings	22,491	89,072	10,861	46,205	56,278	6,953	231,860
Travel	34,449	94,161	46,014	4,762	19,627	11,326	210,339
Purchase of Equipment	85	11,184	—	—	72,024	248,324	331,617
Construction of Buildings	—	27,197	—	—	—	48	27,245
Repairs and Upkeep of Buildings and Works	—	1,096	—	—	—	93,300	94,396
Grants in lieu of taxes	—	—	—	—	—	411,473	411,473
Power (electrical)	—	—	—	—	—	166,497	166,497
Screenings	—	—	—	—	—	41,139	41,139
General Expense	28,217	81,470	8,855	76,451	86,642	143,895	425,530
Printing, stationery and office equipment	9,917	16,629	4,567	23,570	17,199	2,748	74,630
Totals	414,486	3,351,115	1,910,833	631,957	785,242	2,493,835	9,587,468

APPENDIX E

BOARD OF GRAIN COMMISSIONERS FOR CANADA



December 31, 1970.

